WPP 001/4 IHC 5,8h 2. Edition

VA 6/100 H 1250 CR 87 0 460 306 193

8.74 supersedes IHC company D 358 engine:

Supplement plunger lift 1.0 mm referenced to outlet "A".

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches**

Pre-stroke setting

and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

			PI	e-setting see revers	se side
1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ²
1 1 Timing device travel	900	3,1-4,1	mm .		
1 2 Supply pump pressure	900	4,6-5,1	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	800	69,0-70,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	270	12,0-18,0	cm ³ /1000 strokes		3,0
15 Start 196 bar	100	mind.90,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1300	16,0-24,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	ns Checking value	es in brackets		
2.1 Timing device	rev/min mm	370-520(340-	550) 600		1050 1070-1220 ,9-5,5)5,2-5,9(4,9-6,2)
2 2 Supply pump	rev/min	200		900	1250
	kp/cm²	1,1-1,6(0,9-	1,8)	(4,4-5,3)	5,7-6,2(5,5-6,4)
Overflow delivery	rev/min	500			1250
,	cm ³ /10 s	55-100(40-11	0)		55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ⁵
End stop	Ful!	1230-1380 (1310-1400) 1300 1200-1240 1180 800 500		(15,0-25,0) (61,5-66,5) (67,5-70,5) (66,0-71,0)	
	Stop	1250	0		
Idle stop	Full	360-410 (340-430) 270	0	(11,0-19,0)	
				(1190 1390)	
	Start	100	mind. 90,0		
End stop		220-320			

Angle to	the stop-plate	Pre-setting dimensions
Pump α β γ δ	= 25 ± 4° = 55 ± 8° = 30 - 8° = 60 + 8°	Pump Dimension IVF 2,2 mm Dimension V= 24,6 mm

46

WPP 001/4 DEE 2,5e 2

1. Edition

VA 3/100 H 1000 BR 28-2

supersedes

John Deere

company John 493 B

Setting of pointer with plunger lift 1.72 mm referenced to outlet "A" in line with TDC position of corresponding engine cylinder

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

nder				P-0-1-0	٠.	·
Pre-stroke sett	ting	0,3	mm			

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery
1 1 Timing device travel	600	6,9-7,9	mm		
1 2 Supply pump pressure	600	5,1-5,6	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	1000	48,5-49,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4 Idle speed regulation	400	9,0-15,0	cm ³ /1000 strokes		3,0
4 5 Start			cm ³ /1000 strokes		
1.6 Full-load speed regulation	1060	26,0-34,0	cm ³ /1000 strokes		

2. Test Specifications Checking values in brackets 100-260 (70-290) 600 790-940 21 Timing device rev/min (6,6-8,2)9,7-10,4(9,4-10,7) mm Start 100 600 1000 2.2 Supply pump rev/min 1,7-2,2(1,5-2,4) 6,2-6,7(6,0-6,9)(4,9-5,8)kp/cm² 500 1000 Overflow delivery mind. 25,0 55-125(40-140) cm³/10 s

231	Fuel d	alwa	

Speed control 'ever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ⁵
End stop	Full	1120-1210 (1100-1230)	0		
			max. 3,0		
1		1000	, - 	(25,0-35,0)	
		1000		(48,0-50,0)	
		500 100	41,5-45,5 mind. 32,5	(40,5-46,5)	
	Stop	1000	0		
idle stop	Full	470-530	0		
		(450-550) 400		(8,0-16,0)	
	Start				
End stop					

	Pre-setting dimensions	
Pump = 25 ± 4° = 30 ± 8° = 30 - 8° = 60 + 8°	Pump Dimension V= 3,0 mm Dimension V= - mm Dimension I = 7,0 mm Dimension II = 10,5 mm Dimension III = 26,8 mm	

WPP 001/4 HAN 2,3d 1

1. Edition

VA 3/100 H 1200 BR 52-3

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

Pre-stroke setting

 $0,3_{mm}$

supersedes company

Hanomag

D 131 engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

13	
41	
500	
-10	
est	

			Pr	e-setting see rever	se side
1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery
1.1 Timing device travel	900	3,5-4,5	mm		
1.2 Supply pump pressure	900	4,9-5,4	kp/cm²		
1.3 Full-load delivery without charge-air pressure	1100	46,5-49,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air			cm ³ /1000 strokes	ļ	
pressure 1 4 Idle speed regulation	300	10,0-16,0	cm ² /1000 strukes		3,0
1.5 Start (mech)	100	mind. 65,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1350	28,5-36,5	cm ³ /1000 strokes		

2. Test Sp	ecificati	ONS Checking values in brackets		
2.1 Timing device	rev/min	520-670(490-700)	900	1000-1150
	mm	Start	(3,2-4,8)	5,7-6,4(5,4-6,7)
2.2 Supply pump	rev/min	100	900	1300
kp/cm²	1,4-1,9(1,2-2,1)	(4,7-5,6)	6,1-6,6(5,9-6,8)	
Quartian datinam		500	1000	•
Overflow delivery rev/min cm ³ /10 s		mind. 25	55-125(40-140)	

23	Fuel	deliveries
20	1 00	CELLACTIC?

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	Charge-air pressure kp/cm ⁻⁶
End stop	Full	1390-1450 (1370-1470) 1350 1250 1100 500	0 (27,5-37,5) 48,0-51,0 (47,0-52,0) (48,0-50,0) 44,0-47,5 (43,5-48,5)	
	Stop	1300	0	
Idle stop	Full	380-430 (360-450) 300	0 (9,0-17,0)	
End stop	Start	100 mind.150	mind.65,0	

Angle to the stop-plate	Pre-setting dimensions	
Pump a = 25 ± 4° b = 40 ± 8° = 30 - 8° = 60 ± 8°	Pump Dimension IV= 5,5 mm Dimension V = - mm	

WPP 001/4 HAN 2,3c 3. Edition

VA 3/100 H 1500 BR 129-4 0 460 303 088

supersedes 6.70 Hanomag company D 132 W engine

Setting of the pointer at a stroke of 1,12 mm in relation to outlet "A".

0,3 mm

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers

Pre-stroke setting

Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device have?	1000	6,0-7,0	mm .		
1.2 Supply pump pressure	1000	4,7-5,2	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	1200	58,5-59,5	cm ³ /100©strokes		2,5
Full-load delivery with charge-air pressure			cm ³ /4000 strokes		
1.4 Idle speed regulation	300	10,0-13,0	cm ³ /1000 sirckes	1	3,0
1 5 Start	100	mind.60,0	cm ³ /9000 strokes		
1.6 Full-load speed regulation	1580	16,0-24,0	cm ³ /x000 strokes		

2 1 Timing device	rev/min	510-640(480	-670)	1000	1260-1400
	mm	Start		(5,7-7,3)	9,7-10,4(9,4-10,7)
22 Supply pump	rev/min	100		1000	1500
	kp/cm²	0,7-1,2(0,5	-1,4)	(4,5-5,4)	6,1-6,6(5,9-6,8)
Overflow delivery	rev/min	500		1500	
	cm ³ /10 s	mind.25	;	85-155(70-170))
23 Fuel deliveries	<u> </u>				
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm [≤]
End stop	Full	1610-1660 (1590-1680) 1580 1450 1200 500		(15,0-25,0) (58,0-63,0) (58,0-60,0) (52,0-57,0)	
	Stop	1500	0 .		
idle stop	FUN	340-440 (360-460) 300	0	(9,0-14,0)	
End stop	Start	100 300-550	mind.60,0		

Angle to the stop-plate	Pre-setting dimensions
Pump $a = 25 \pm 4^{\circ}$ $B = 45 \pm 8^{\circ}$ $A = 30 - 8^{\circ}$ $A = 60 + 8^{\circ}$	Pump Dimension IV = 0,5 mm BMP 161/32 Dimension V = mm

VA 6/100 H 1300 BR 54-2

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

Pre-stroke setting

0,1 mm

supersedes

company:

Hanomag D 161 R-75 PS

engine.

All test specifications are valid for BOSON Fuel Injection Pump Test Benches

and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

	4 0			e-setting see revers	e side	
1.	Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery
1.1	Timing device travel	1000	3,4-4,4	mm		
1.2	Supply pump pressure	1100	5,3-5,8	kp/cm²		
1.3	Full-load delivery without charge-air pressure	1100	47,5-48,5	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4	Idle speed regulation	300	12,0-18,0	cm ⁹ /1000 strokes	† 	3,0
1.5	Start (mech.)	100	mind.65,0	cm ³ /1000 strokes		
1.6	Full-load speed regulation	1390	26,0-34,0	cm ³ /1000 strokes		

2. Test Sp 2.1 Timing device	rev/min	One Checking values in brackets 520-670 (490-700)	1000	1120-1240
	mm	Start	(3,1-4,7)	4,7-5,4(4,4-5,7)
2.2 Supply pump	rev/min	100	1100	1300
	kp/cm²	1,0-1,5(0,8-1,7)	(5,1-6,0)	5,9-6,4(5,7-6,6)
Overflow delivery	rev/min	500	1000	
a contain	cm ³ /10 s	mind. 25	55-125(40-	140)

2.3 Fuel	deliveries
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Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	Charge-air pressure kp/cm [≤]
End stop	Full	1430-1480 (1410-1500) 1390 1300 1100 500	0 (25,0-35,0) 46,5-49,5 (45,5-50,5) (47,0-49,0) 43,5-46,5 (42,5-47,5)	•
	Stop	1300	0	·
Idle stop	Full	380-450 (360-470) 300	0 (11,0-19,0)	
End stop	Start	100 500	mind. 65,0 mind. 25,0	

Angle to	the stop-plate	Pre-setting dimensions
Pump		Pump
a	= 25 ± 4°	Dimension IV = 6,0 mm
β	= 40 ± 8°	Dimension V = - mm
٧ .	= 30 - 8°	
δ	= 60 <u>+</u> 8°	
	_	

WPP 001/4 HAN 3,1e

Edition

VA 4/100 H 1300 BR 53-2

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

6.69 supersedes

company:

Hanomag D 142 K

engine:

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B Pre-setting see reverse side

Pre-stroke setting 0,1

1. Settings	rev/min	Settings		Charge-air press. kp/cm²	Difference in deliver
1.1 Timing device travel	1100	5,0-6,0	mm		
1.2 Supply pump pressure	1100	4,8-5,3	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	1100	57,0-58,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4 Idle speed regulation	350	10,0-16,0	cm ⁹ /1000 strokes		3,0
1.5 Start (mech.)	100	mind.75,0	cm ³ /1000 strokes	,	
1.6 Full-load speed regulation	1350	31,0-39,0	cm ³ /1000 strakes		

2.1 Timing device	rev/min	ONS Checking values in brackets 560-720 (530-750)	1100	1160-1300
	mm	Start	(4,7-6,3)	6,7-7,4(6,4-7,7)
2.2 Supply pump	rev/min	100	1100	1300
	kp/cm²	0,7-1,2(0,5-1,4)	(4,6-5,5)	5,3-5,8(5,1-6,0)
Overflow delivery	rev/min	500	1000	
•	cm ³ /10 s	mind. 25	55-125(40-14)))

23	Fuel deliveries	

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cr
End stop	Full	1430-1490 (1410-1510) 1350 1250 1100 500	0 57,5-60,0 53,5-56,5	(30,0-40,0) (56,5-61,5) (56,5-58,5) (52,5-57,5)	
	Stop	1300	0		
Idle stop	Full	450-510 (430-530) 350	0	(9,0-17,0)	
End stop	Start	100 500 mind.150	mind. 75,0 mind. 25,0		

Pre-settin		to the stop-plate	Angle to t
Pump			Pump
Dimension	4° .	$= 25 \pm 4^{\circ}$	α
Dimension	8°	$= 40 \pm 8^{\circ}$	β
	8°	$= 30 - 8^{\circ}$	٧
	8°	$= 60 + 8^{\circ}$	0
			δ

WPP 001/4 HAN 3,1b 3. Edition

VA 4/100 H 1300 BR 137 0 460 304 075

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

Pre-stroke setting

0.1 mm

supersedes 4.69
company D 141 R

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B
Pre-setting see reverse side

			<u></u> <u></u> - <u></u> - <u></u> - <u></u> -	e-serring see revers	se side
1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	1100	5,0-6,0	mm		
1.2 Supply pump pressur	e 1100	4,8-5,3	kp/cm²		
1.3 Full-load delivery with charge-air pressure	1100	49,5-50,5	cm ³ /1000 strokes		2,5
Full-load delivery with pressure	n charge-air		cm ³ /1000 strokes		
1.4 Idle speed regulation	320	17,0-23,0	cm ⁹ /1000 strokes		3,0
1.5 Start	100	mind.75,0	cm ³ /1000 strokes		
1.6 Full-load speed regul	ation 1400	22,0-28,0	cm ³ /1000 strokes		

2.1 Timing device	rev/min	Checking values in brackets 560-720 (530-750)	1100	1160-1300
	mm	Start	(4,7-6,3)	6,7-7,4(6,4-7,7)
2.2 Supply pump	rev/min	100	1100	1300
	kp/cm²	0,5-1,0(0,3-1,2)	(4,6-5,5)	5,4-5,9(5,2-6,1)
Overflow delivery	rev/min	500		1000
overnous delivery	cm ³ /10 s	mind. 25		55-125(40-140)

	cm ³ /10 s	mind. 2	25		55-125(40-140)
2.3 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ³
End stop	Full	1480-1540 (1460-1560) 1400 1300 1100 500		(21,0-29,0) (46,5-51,5) (49,0-51,0) (48,0-53,0)	
	Stop	1300	0		
idle stop	Full	450-510 (430-530) 320	0	(16,0-24,0)	
End stop	Start	100 300-550	mind.75,0		·

Angle to the stop-plate	Pre-setting dimensions
Pump	Pump
α = 25 <u>+</u> 4°	Dimension IV = ~ MM
^β = 40 ± 8°	Dimension V = - mm
$\frac{y}{\delta}$ = 30 - 8°	
= 60 + 8°	

WPP 001/4 HAN 3,1b 1

1. Edition

VA 4/100 H 1500 BR 137-2 0 460 304 095

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

2. Test Specifications Checking values in brackets 630-770 (610-790)

supersedes

Hanomag D 142 W

company.

engine

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

1350-1470

Pre-setting see reverse side

Pre-stroke setting

2.1 Timing device rev/min

0.1

1.	Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1	Timing device travel	1100	5,0-6,0	mm		
1.2	Supply pump pressure	1100	4,8-5,3	kp/cm²		
1.3	Full-load delivery without charge-air pressure	1200	54,5-55,5	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air			cm ³ /1000 strokes		
1.4	pressure Idle speed regulation	320	17,0-23,0	cm ³ /1000 strokes] [3,0
1.5	Start	100	mind.75,0	cm ³ /1000 strokes		
1.6	Full-load speed regulation	1600	21,0-29,0	cm ³ /1000 strokes		

1100

2.2 Supply pump	rev/min kp/cm²	Start 100 0,6-1,1(0,4 500		1000		,4(8,4-9,7) 1500 ,4(5,7-6,6) 1500
Overflow delivery	rev/min cm ³ /10 s	mind. 25			85-	-125(70-140)
2.3 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes			Charge-air pressure kp/cm ³
End stop	Full	1650-1710 (1630-1730) 1600 1450 1200 600	0 52,5-55,5 52,0-55,0	(20,0- (51,5- (54,0- (51,0-	56,5) 56,0)	
	Stop	1500	0			
Idle stop	Full	450-510 (430-530) 320	0 mind. 75,0	(16,0-	24,0)	,
	Start		,,,,,,			·

Festoil-ISO 4113

End stop

300-550

Angle to the stop-plate	Pre-setting dimensions
Pump c = 25 ± 4° b = 45 ± 8° v = 30 - 8° = 60 + 8°	Pump Dimension IV = - MM Dimension V = - MM

WPP 001/4 HAN 4,2a

3. Edition

VA 6/100 H 1300 BR 54

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

4.69 supersedes Hanomag company D 161 R

engine

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-siroke setting

0,3 mm

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	1000	3,4-4,4	mm		
1.2 Supply pump pressure	1000	4,6-5,1	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	1100	41,5-42,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		-
1 4 Idle speed regulation	300	10,0-16,0	cm ³ /1000 strokes		3,0
1.5 Start (autom.)	100	mind.65,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1360	21,0-29,0	cm ³ /1000 strokes		•

2.1 Timing device	rev/min	520-670(490-700)	1000	1220-1240
	mm	Start	(3,1-4,7)	4,7-5,4(4,4-5,7)
22 Supply pump	rev/min	100	1000	1300
	kp/cm ⁻	0,8-1,3(0,6-1,5)	(4,4-5,3)	5,6-6,1(5,4-6,3)
Overflow delivery	rev/min	500	1000	
	cm ³ /10 s	mind.25	55-125(40	-140)

23 Fuel deliveries

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ^{\$}
End stop	Full	1400-1450 (1380-1470) 1360 1280 1100	0 41,5-44,5	(20,0-30,0) (40,5-45,5)	
		500	36,5-39,5	(41,0-43,0) (35,5-40,5)	
	Stop	1300	0	•	
idle stop	Full	360-420 (340-440) 300	0	(9,0-17,0)	
End stop	Start	100 500	mind.65,0 max. 30,0		

Angle to the stop-plate	Pre-setting dimensions
Pump a = 25 ± 4° b = 40 ± 8° y = 30 - 8° b = 60 ± 8°	Pump Dimension IV = 5,5 mm Dimension V = - mm Dimension I ** Dimension II **

* * According to the wear-parts list (BR)

WPP 001/4 HAN 2,3 b

2. Edition

VA 3/1000 H 1300 BR 52

4.69 supersedes Hanomag company-D 131

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

engine: All test specifications are valid for

Pre-stroke setting

Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

0,3 mm

1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ²
1.1 Timing device travel	1100	3,3-4,3	mm		
1.2 Supply pump pressure	1100	5,0-5,5	kp/cm²		
1.3 Full-load delivery without charge-air pressure	1000	51,5-52,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4 idle speed regulation	300	11,0-17,0	cm ⁹ /1000 stroke/s		3,0
1.5 Start (mech.)	100	mind.65,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1380	25,0-33,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	ns Checking value	es in brackets		
2.1 Timing device	rev/min	750-850(72	(0-880)	1100	1100-1200
	mm			(3,0-4,6)	3,7-4,4(3,4-4,7)
2.2 Supply pump	rev/min	100		1100	1300
	kp/cm²	0,6-1,1(0,	4-1,3)	(4,8-5,7)	5,6-6,1(5,4-6,3)
Overflow delivery	rev/min	500		1000	
	cm ³ /10 s	mind. 25		55-125(40	(-140)
2.3 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²
End stop	Full	1430-1480	0		

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strakes		Charge-air pressure kp/cm ²
End stop	Full	1430-1480 (1410-1500) 1380 · 1300 1000 600	0 51,0-54,0 52,0-55,0	(24,0-34,0) (50,0-55,0) (51,0-53,0) (51,0-56,0)	
	Stop	1300	0		
Idle stop	Full	420-480 (400-500) 300	0	(10,0-18,0)	
End stop	Start	100 500	mind.65,0 max. 45,0		,

Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $V = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$ Pump Dimension IV = 7,5 mm (s.a.BMP) Dimension V = - mm	Angle I	to the stop-plate	.'re-setting dimensions
	a B Y	= 40 ± 8° = 30 - 8°	Dimension IV = 7,5 mm (s.a.BMP)

WPP 001/4 HAN 4,2a 1

1. Edition

VA 6/100 H 1300 BR 54-1

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

supersedes

Hanomag

engine:

company. D 162 R

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

0,3 mm

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ²
1.1 Timing device travel	1100	6,0-7,0	mm		
1.2 Supply pump pressure	1100	5,3-5,8	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	1100	54,0-55,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4 Idle speed regulation	300	9,0-15,0	cm ⁹ /1000 strokes		3,0
1.5 Start (autom.)	100	mind.65,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1380	28,0-36,0	cm ³ /1000 strokes		

2. Test Sp	ecification	S Checking values in brackets		
2.1 Timing device	rev/min	530-680(500-710)	1100	1180-1300
	mm	Start	(5,7-7,3)	7,7-8,4(7,4-8,7)
2.2 Supply pump	rev/min	100	1100	1130
	kp/cm²	1,0-1,5(0,8-1,7)	(5,1-6,0)	5,9-6,4(5,7-6,6)
Overflow delivery	rev/min			
	cm ³ /10 s	•		

22	Euroi	delive	
2.3	ruei	UCHYE	er i e s

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²
End stop	Full	1430-1470 (1410-1490) 1380 1280 1100 500	0 53,5-56,5 51,0-55,0	(27,0-37,0) (52,5-57,5) (53,5-55,5) (50,0-56,0)	
	Stop	1300	0		
Idle stop	Full	400-460 (380-480) 300 100 500	0 mind.65,0 max.45,0	(8,0-16,0)	

Angle to the stop-plate		Pre-setting dimensions
Pump α β γ δ	= 25 ± 4° = 40 ± 8° = 30 - 8° = 60 ± 8°	Pump Dimension IV = 6,0 mm (s.a.BMP) Dimension V = - mm Dimension I ** Dimension II **

* * According to the wear-parts list (BR)

WPP 001/4 HAN 4,7a 1

1. Edition

VA 6/100 H 1500 BR 138-3 0 460 306 092

supersedes company engine

Hanomag D, 161 W

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

2. Test Specifications Checking values in brackets

All test specifications are valid for Bosch Fuel Injection Pump Test Benches

and Testers

Test Intructions and Test Equipment **VDT-WPP 161/4** [3

0,3 mm Pre-stroke setting

Pre-setting see reverse side

1.	Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1	Timing device travel	1000	5,6-6,6	mm	·	
1.2	Supply pump pressure	1000	4,6-5,1	kp/cm²		
1.3	Full-load delivery without charge-air pressure	1200	47,5-48,5	cm ³ /1000 strokes	i	2,5
	Full-load delivery with charge-air			cm ³ /1000 strokes		
14	pressure Idle speed regulation	300	9,0-15,0	cm ³ /1000 strokes		3,0
15	Start	100	mind.65,0	cm ³ /1000 strokes	;	
16	Full-load speed regulation	1570	12,0-18,0	cm ³ /1000 strokes		

2. rest spi	rev/min	1380-510(350-		1000	1290-1420
2 1 Timing device	mm	Start	•		8,7-9,4(8,4-9,7)
2.2 Supply pump	rev/min	100		1000	1500
	kp/cm ⁻	1,0-1,5(0,8-	1,7) (4	1,4-5,3)	5,9-6,4(5,7-6,6)
Overflow delivery	rev/min cm ³ /10 s	500 mind.25			1500 55-125(40-140)
23 Fuel deliveries	Delivery lever	rev/min	cm ³ /1000 stroke	c	Charge-air pressure kp/cm ^{&}
Speed control lever					Charge an process remains
End stop	Full	1610-1660 (1590-1680)	0		
		1570 1450 1200	45,0-48,0	(11,0-19,0) (44,0-49,0) (47,0-49,0)	1
		500	37,0-40,0	(36,0-41,0)	

0

0

mind.65,0

(8,0-16,0)

1500

400-460

(380-480)

300

100

120-200

Testoil-ISO 4113

BOSCH

End stop

Idle stop

Stop

Full

Start

Angle to the stop-plate	Pre-setting dimensions
Pump α = 25 ± 4° β = 45 ± 8° γ = 30 - 8° = 60 + 8°	Pump Dimension IV = ~ MM Dimension V = ~ MM

WPP 001/4 HAN 4,7a

Edition

VA 6/100 H 1500 BR 138-2 . 0 460 306 091

supersedes

6.69

company engine:

Hanomag D 162 W

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers **Test Intructions and Test Equipment**

VDT-WPP 161/4 B

Pre-stroke setting

0,3 mm

Pre-setting see reverse side 1. Settings rev/min **Settings** Charge-air press. kp/cm² Difference in delivery

1.1 Timing device travel 1100 6,1-7,1 mm 1100 1.2 Supply pump pressure 5,3-5,8 kp/cm² 1.3 Full-load delivery without 1100 54,0-55,0 cm3/1000 strokes 2,5 charge-air pressure Full-load delivery with charge-air cm3/1000 strokes pressure 1.4 Idle speed regulation 300 9,0-15,0 3,0

28,0-36,0

cm3/1000 strokes

cm³/1000 strokes 100 1.5 Start mind.65.0 cm3/1000 strokes

1580

2. Test Specifications Checking values in brackets 2.1 Timing device rev/min 530-680(500-710) 1100 1240-1370 Start (5,8-7,4)8,7-9,4(8,4-9,7) 100 1100 2.2 Supply pump 1300 rev/min 1,0-1,5(0,8-1,7) kp/cm² (5,1-6,0)5,9-6,4(5,7-6,6) 500 1500 Overflow delivery rev/min cm³/10 s mind.25 55-125 (40-140)

2.3 Fuel deliveries

1.6 Full-load speed regulation

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²
End stop .	Full	1630-1670 (1610-1690) 1580 1280 1100 600		(27,0-37,0) (52,5-57,5) (53,5-55,5) (54,5-59,5)	
	Stop	1500	0		
edle stop	Full	400-460 (380-480) 300 100 120-220	0 mind.65,0	(8,0-16,0)	

Angle to the stop-plate	Pre-setting dimensions
Pump $^{\alpha} = 25 \pm 4^{\circ}$ $^{\beta} = 40 \pm 8^{\circ}$ $^{\gamma} = 30 - 8^{\circ}$ $^{= 60 + 8^{\circ}}$	Pump Dimension IV = 5,0 mm (BMP 161/32) Dimension V = - mm

46

WPP 001/4 HAN 4,2A

3. Edition

VA 6/100 H 1300 BR 138 0 460 306 064 supersedes 4.69
Hanomag
company D 161 K
engine

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

All test specifications are valid for

0,3

Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-stroke setting

-mn

Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	1000	3,5-4,5	пm		
1 2 Supply pump pressure	1000	4,6-5,1	kp/cm ²		
1.3 Full-load delivery without	1100	42,5-43,5	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-ai pressure			cm ³ /1000 strokes		3,0
1.4 Idle speed regulation	300	10,0-16,0	cm ³ /1000 strokes		3,0
1.5 Start	100	mind. 65,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1360	21,0-29,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	ns Checking value 520–670 (49	s in brackets	1000	1120-1240
2 1 Timing device	rev/min mm	Start	0-700 <i>)</i>	(3,2-4,8)	
2.2 Supply pump	rev/min kp/cm²	100 0,8-1,3(0,6	-1,5)	1000 (4,4-5,3)	
Overflow delivery	rev/min cm ³ /10 s	500 mind. 25		· ·	1000 55-125(40-140)
23 Fuel deliveries		,			
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strok	es	Charge-air pressure kp/cm²
End stop	Full	1400-1450 (1380-1470) 1360 1280 1100 500	0 42,5-45, 37,5-40,	(20,0-30,05 (41,5-46,042,0-44,05 (36,5-41,	5) 0)
	Stop	1300	0	¢	
idle stop	Full	360-420 (340-440) 300	0	(9,0-17,0)
End stop	Start	100 130-230	mind.65,	0	·
	1	1	1		

Angle to the stop-plate	Pre-setting dimensions
Pump α = 25 ± 4° β = 40 ± 8°	Pump Dimension IV = 5,5 mm Dimension V = - 印刷
y = 30 - 8° δ = 60 + 8°	Dimension I = Dimension II = * Dimension III =

* According to the wear-parts list:

WPP 001/4 HAN 3,1b 2

Edition

VA 4/100 H 1500 BR 137-3 0 460 304 096

Pre-stroke setting

0,1

2. Test Specifications

rev/min

2.1 Timing device

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

supersedes

Hanomag company: D 141 W

engine:

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers **Test Intructions and Test Equipment**

1350-1470

VDT-WPP 161/4 B

Pre-setting see reverse side

mm

Checking values in brackets

560-720(530-740)

estoil-ISO 4113

1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ²
1.1 Timing device travel	1100	5,0-6,0	mm		
1.2 Supply pump pressure	1100	4,4-4,9	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	1200	52,5-53,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air			cm ³ /1000 strokes	1	
pressure 1.4 Idle speed regulation	320	17,0-23,0	cm ³ /1000 strokes	1	3,0
1.5 Start	100	mind.65,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1600	13,0-21,0	cm ³ /1000 strokes		

1100

2 2 Supply pump Overflow delivery	mm rev/min kp/cm² rev/min cm ³ /10 s	Start - 100 0,6-1,1(0,4- 500 mind.25		1100	5,	7-9,4(8,4-9,7) 1500 6-6,1(5,4-6,3) 1500 55-125(40-140)
23 Fuel deliveries Speed control lever	Delivery lever	rev/min	cm ³ /1000 stroke	es .		Charge-air pressure kp/cm ²
End stop	Full	1630-1680 (1610-1700) 1600 1450 1200 600	50,0-53,0 47,0-50,0	(16,0-24,0 (49,0-54,0 (52,0-54,0 (46,0-51,0))))))	
	Stop	1500	0			
idle stop	Full	450-510 (430-530) 320	0	(16,0-24,0))	
End stop	Start	100 300-550	mind.65,0			

	nsion IV = 3,0 mm
$8 = 45 \pm 8^{\circ}$ $Y = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	nsion V = - IMM

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WPP 001/4 DEE 2,5e

3. Edition

En

YA 3/100 H 1200 BR 28

Plunger lift 1.72 mm referenced to outlet "A" in line with engine TDC position.

Pre-stroke setting

0,3 _{mm}

supersedes 12.71 John Deere

engine: 493 B

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

1.	Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1	Timing device travel	600	6,9-7,9	mm .		
1.2	Supply pump pressure	600	5,1-5,6	kp/cm ²		
1.3	Full-load delivery without charge-air pressure	1000	48,5-49,5	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4	Idle speed regulation	400	9,0-15,0	cm ⁹ /1000 strokes		3,0
1.5	Start			cm ³ /1000 strokes		
1.6	Full-load speed regulation	1230	26,0-34,0	cm ³ /1000 strokes		

2. Test Sp	ecificati	ONS Checking values in brackets 100-260 (70-290)	600	700.040
2.1 Timing device	rev/min	100-260(70-290)	600	790-940
	mm	Start	(6,6-8,2)	9,7-10,4(9,4-10,7)
2.0 Supely average		100	600	1000
2.2 Supply pump	rev/min kp/cm²	1,7-2,2(1,5-2,4)	(4,9-5,8)	6,2-6,7(6,0-6,9)
		500	1000	•
Overflow delivery	rev/min cm ³ /10 s	mind. 25	55-125(40-	140)

2.3 Fuel deliveries		i,			
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²
End stop	Full	1290-1380 (1270-1400) 1330 1230 1150 1000 500 100]	(25,0-35,0) (45,5-50,5) (48,0-50,0) (40,5-46,5)	
Idle stop	Full Start	470-530 (450-550) 400 	0	(8,0-16,0)	·
End_stop					<u> </u>

Angle to the stop-plate	Pre-setting dimensions
Pump a = 25 ± 4° B = 30 ± 8° Y = 30 - 8° δ = 60 ± 8°	Pump Dimension IV = 3,0 mm Dimension V = - mm Dimension I = 7,0 mm Dimension II = 10,5 mm Dimension III = 26,8 mm

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WPP 001/4 HAN 4,2 a 1 1. Edition

n

VA 6/100 H 1300 BR 138-1

0 460 306 065

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

Pre-stroke setting

0,3 mm

supersedes

company

Hanomag

engine

D 162 R

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge-air press	Difference in delivery cm ²
1.1 Timing device travel	1100	6,7-7,1	mm		
1.2 Supply pump pressure	1100	5,3-5,8	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	1100	54,0-55,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1 4 Idle speed regulation	300	9,0-15.0	cm ² /1000 strokes	! 	3,0
1.5 Start	100	mind.65,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1380	28,0-36,0	cm ⁹ /1000 strokes		

2. Test Sp	ecificatio	ns Checking valu			4400 4200	
2.1 Timing device rev/min		530-680(500·	-710)	1100	1180-1300	
	mm	Start		(5,8-7,4)	7,7-8,4(7,4-8,7)	
0.0 F	rev/min	⁻ 100		1100	1300	
2.2 Supply pump	kp/cm ²	1,0-1,5(0,8	-1,7)	(5,1-6,0)	5,9-6,4(5,7-6,6)	
	,	500	•		100	
Overflow delivery	rev/min cm ³ /10 s	mind.25			55-125(40-140)	
23 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²	
End stop	Full .	1430-1470 (1410-1490 1380	0	(27,0-37,0)		
		1280	53,5-56,5	(52,5-57,5) (53,5-55,5)		
		1100 500	52,0-55,0	(51,0-55,0)		
	Stop	1300	0.			

Testoil-ISO 4113

BOSCH

End stop

Start

Idle stop

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0

mind.65,0

(8,0-16,0)

400-460

(380-480)

300

100

120-200

Angle to the stop-plate	Pre-setting dimensions
	Pump Dimension IV = 5,0 mm Dimension V = - mm Dimension I = Dimension II = * Dimension III

* According to the wear-parts list

46

WPP 001/4 SAV 3,3 b 2. Edition

VA 4/100 H 1250 BR 141-3 0 460 304 131 supersedes

7.71

company:

Saviem

engine:

Manox 712-51

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B
Pre-setting see reverse sids

Pre-stroke setting 0,1 mm Plunger lift 0.3 mm at 23° BTDC

					e-setting see revers	
1.	Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1	Timing device travel	900	5,3-6,3	mm .		
1.2	Supply pump pressure	900	4,8-5,3	kp/cm²		
1.3	Full-load delivery without charge-air pressure	900	49,0-50,0	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4	Idle speed regulation	300	7,0-13,0	cm ⁹ /1000 strokes		3,0
1.5	Start	100	mind.80,0	cm ³ /1000 strokes		
1.6	Full-load speed regulation	1300	31,0-39,0	cm ¹ /1000 strokes		

2. Test Sp 2.1 Timing device	rev/min mm	ns Checking value 380-530(350- Start			8,7	1100-1250 -9,4(8,4-9,7)
22 Supply pump	rev/min kp/cm²	100 0,8-1,3(0,6- 500	1,5)	900 (4,6-5,5)	5,4	1250 -5,9(5,2-6,1) 1250
Overflow delivery	rev/min cm ³ /10 s	mind.25			55	-125(40-140)
23 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 stroke	s		Charge-air pressure kp/cm²
End stop	Full	1360-1410 (1340-1430) 1300 1250 900 500	1	(31,0-3 0 (50,0-5 (48,5-5 0 (43,0-4	3,0) 0,5)	
	Stop	1250	0			
idle stop	Full	350-400 (330-420) 300	0	(6,0-14	,0)	
End stop	Start	100 120-220	mind. 80,	0		

Testoil-ISO 4113

BOSCH

Angle to the stop-plate	Pre-setting dimensions		
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 35 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 2,0 mm Dimension V = - mm		

WPP 001/4 SAV 3,3 a

2. Edition

VA 4/100 H 1600 BR 141 0 460 304 081

supersedes company

6.68 Renault 7120-03/04

engine.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers **Test Intructions and Test Equipment**

VDT-WPP 161/4 B

Pre-setting see reverse side

mm Pre-stroke setting Plunger lift 0.3 mm at 23° BTDC

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	800	4,8-5,8	mm		
1 2 Supply pump pressure	800	4,2-4,7	kp/cm²	,	
1 3 Full-load delivery without charge-air pressure	1000	48,0-49,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		Å
pressure 1 4 Idle speed regulation	300	9,5-15,5	cm ³ /1000 strokes		3,0
1 5 Start	100	mind.80,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1640	36,0-44,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	NS Checking value				
2.1 Timing device	rev/min	340-520(310	-550)	800		1390-1570
	mm	Start		(4,5-6,1)	13,7	7-14,4(13,4-14,7)
2.2 Supply pump	rev/min	100		800	•	1600
	kp/cm ²	1,1-1,6(0,9	-1,8)	4,0-4,9)	7,0)-7,5(6,8-7,7)
Overflow delivery	rev/min	500				1500
	cm ³ /10 s	mind. 25			5	55-125(40-140)
23 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 stro	okes		Charge-air pressure kp/cm ²
End stop	Full	1740-1850 (1720-1870) 1770 1640 1550 1000 800	0 max. 5, 45,5-48 40,5-44	0 (35,0- 3,5 (44,5- (47,5- ,0) (39,5-	45,0) 49,5) 49,5) 45,0)	
	Stop	1600	0			
Idle stop	Full	370-480 (350-500) 300	0	(8,5-1	6,5)	
End stop	Start	100 120-220	mind.80	,0		

Angle to t	the stop-plate	Pre-setting dimensions		
•	= 25 <u>+</u> 4°	Pump Dimension IV = ~ MM		
γ δ	= 45 <u>+</u> 8° = 30 - 8° = 60 + 8°	Dimension V = - mm According to -me was a second		
=	= 60 + 8°	According to the wear-parts list		

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WPP 001/4 HAN 3,1a 4

Edition

VA 4/100 H 1700 CR 118

CR 118-2

0 460 304 129 0 460 304 152

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

Pre-stroke setting

0,1 _{mm} $\pm 0,02$ ($\pm 0,04$)

supersedes

superseues

company: Hanomag

engine:

D 141 L

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

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			Pre-setting see reverse si		
1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ²
1.1 Timing device travel	1300	2,8-3,6	mm .		
1.2 Supply pump pressure	1300	5,4-3,6	kp/cm²		
1.3 Full-load delivery without charge-air pressure	1000	47,0-48,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1 4 Idle speed regulation	350	10,0-16,0	cm ³ /1000 strokes		3,0
1.5 Start	100	mind.65,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1850	16,0-24,0	cm ¹ /1000 strokes		

2.1 Timing device	rev/min	Ons Checking values in brackets 750-900 (720-930)	1300	1550-1670
	mm	Start	(2,5-3,9)	5,1-5,8(4,8-6,1)
2.2 Supply pump	rev/min	- 200	1300	1700
	kp/cm²	1,0-1,5(0,8-1,7) 500	(5,2-6,1)	6,7-7,2(6,5-7,4) 1700
Overflow delivery	rev/min cm ³ /10 s	55-100(40-110)		55-100(40-110)

2.3 Fuel deliveries

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	Charge-air pressure kp/cm²
End stop	Full	1880-1960 (1860-1980) 1850 1650 1000 500	0 (15,0-25 43,5-46,5 (42,5-47 (46,5-48 41,0-45,0 (40,0-46	7,5)
	Stop	1700	0	5
Idle stop	Full	430-560 (410-580)	0	
End stop	Start	100 180-250	mind.65,0	

Angle to the stop-plate	Pre-setting dimensions
Pump $a = 25 \pm 4^{\circ}$ $b = 55 \pm 8^{\circ}$ $b = 30 - 8^{\circ}$ $b = 60 + 8^{\circ}$	Pump Dimension ₹ 4,5 mm Dimension ₹ 24,6 mm

WPP 001/4 HAN 3,1a 1

Edition

VA 4/100 H 1700 CR 118-1 CR 118-3

Pra-stroke setting

0 460 304 130 Setting of the pointer at \bar{a} stroke of 1 mm in 0 460 304 153 relation to outlet "A".

 $0,1_{mm} \pm 0,02 (\pm 0,04)$

12.70 supersedes Hanomag company D 142 L

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

estoil-ISO 4113

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery
1.1 Timing device travel	1300	3,6-4,4	mm		
1.2 Supply pump pressure	1300	5,4-5,9	kp/cm ²		
1.3 Full-toad delivery without	1000	54,5-55,5	cm ³ /1000 strokes		2,5
charge-air pressure			cm ³ /1000 strokes		
Full-load delivery with charge-air pressure	350	10,0-16,0	cm ³ /1000 strokes		3,0
1.4 Idle speed regulation	100	mind.65,0	cm ³ /1000 strokes		
1.5 Start	1 750	38,5-46,5	cm ¹ /1000 strokes		
1.6 Full-load speed regulation		1			<u> </u>

2. Test Sp 2.1 Timing device 2.2 Supply pump Overflow delivery	rev/min mm rev/min kp/cm² rev/min cm³/10 s	750-930(720- 750-930(720- Start - 200 1,2-1,7(1,0- 500 55-100(40-11	·1,9)	1300	1550-1700 6,1-6,8(5,8-7,1) 1700 6,9-7,4(6,7-7,6) 1700 55-100(40-110)
2.3 Fuel deliveries Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1870-1920 (1850-1940) 1750 1680 1000 600	0 + 1,0 55,0-58,0 + 0,5 53,0-57,0	(37,5-47,5) (54,0-59,0) (54,0-56,0) (52,0-58,0)	
	Stop	1700	0		
idle stop	Full	480-580 (460-600) 350	0 ±	(9,0-17,0)	
End stop	Start	100 180-250	mind.65,0		

Angle to the stop-plate	Pre-setting dimensions
Fump a = 25 ± 4° b = 55 ± 8° y = 30 - 8° = 60 + 8°	Pump Dimension IV = 4,0 mm Dimension V = 24,6 mm

WPP 001/4 SAV 3,3 b 7

1. Edition

VA 4/100 H 1300 CR 141-10 . 0 460 304 216

supersedes

company:

Saviem

engine:

712-50-050

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

 $0.5 \text{ mm} \pm 0.02 (\pm 0.04)$

1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ²
1.1 Timing device travel	1000	3,1-4,1	mm .		
1.2 Supply pump pressure	1000	5,5-6,0	kp/cm ²	1	
1.3 Full-load delivery without charge-air pressure	900	56,0-57,0	cm ³ /1000 strokes	3	2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes	; ;	
1.4 Idle speed regulation	300	17,0-23,0	cm ³ /1000 strokes		3,0
1.5 Start	100	mind.80,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1350	39,0-40,4	cm ⁹ /1000 strokes		

2. Test Sp	ecificati	Ons Checking values in brackets 470-620 (440-650)		
2.1 Timing device	rev/min	470-620(440-650)	1000	1200
	mm	Start	2,8-4,4	4,3-5,3
2.2 Supply pump	rev/min	200	1000	1300
2.2 Supply pump	kp/cm ²	1,7-2,2(1,5-2,4)	(5,3-6,2)	6,8-7,3(6,6-7,5)
Oversion deliver	coutmen.	500		1300
Overflow delivery	rev/min cm ³ /10 s	55-100(40-110)		55-100(40-110)
				

23 Fuel deliverse	23	3 Fu	el de	liver	es
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Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²
End stop	Full	1420-1500 (1400-1520) 1350 1320-1350 1300 900 500	0 Start 55,5-58,5 48,5-51,1	(38,6-41,4) (54,5-59,5) (55,5-57,5) (47,5-52,5)	
	Stop	1300	0		
Idle stop	Full	450-520 (430-540) 300 100 110-210	0 mind. 80,0	(16,0-24,0)	

Testoil-ISO 4113

Angle to the stop-plate	Pre-setting dimensions
Pump $ \alpha = 25 \pm 4^{\circ} $ $ \beta = 45 \pm 8^{\circ} $ $ \gamma = 30 - 8^{\circ} $ $ = 60 + 8^{\circ} $	Pump Dimension IV = 4,6 mm Dimension V = 24,6 mm

WPP 001/4 SAV 3,3 b 8

1. Edition

VA 4/100 H 1500 CR 141-11 . 0 460 304 211

2. Test Specifications

2.1 Timing device | rev/min

supersedes company:

Saviem 712-52-01

engine:

All test specifications are valid for Bosch Fuel Injection Pump Test Benches

1380-1530

and Testers **Test Intructions and Test Equipment**

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

0,5 mm

1.	Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1	Timing device travel	1200	6,2-7,2	mm		
1.2	Supply pump pressure	1200	5,8-6,3	kp/cm²		
1.3	Full-load delivery without charge-air pressure	900	53,5-54,5	cm ^S /1000 strokes		2,5
	Full-load delivery with charge-air			cm ³ /1000 strokes		
1.4	pressure Idle speed regulation	300	7,0-13,0	cm ³ /1000 strokes		3,0
1.5	Start	100	mind.80,0	cm ³ /1000 strokes		
1.6	Full-load speed regulation	1600	26,0-34,0	cm ⁹ /1000 strokes		

120C

Checking values in brackets

350-500(330-520)

2.1 Imining device	1 CANTINI	1 22 222,000	,		
	mm	Start		(5,5-6,6)	7,9-8,6(7,6-8,9)
2.2 Supply pump	rev/min	200		1200	1500
Overflow delivery	kp/cm² rev/min	1,3-1,8(1,1		(5,6-6,5)	6,8-7,3(6,6-7,5) 1500
	cm ³ /10 s	55-100(4	0-110)		55-100(40-110)
2.3 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1.000 strokes		Charge-air pressure kp/cm²
End stop	Full	1680-1780 (1660-1800)	0		
		1600 1520-1550	Start	(25,0-35,0)	
		1500 900		(46,5-51,5) (53,0-55,0)	
		500	45,0-49,0	(49,0-50,0)	
		1500	0		
	Stop				
Idle stop	Full	370-450 (350-470)	0		
		300		(6,0-14,0)	
End stop	Start	110-210	mind.80,0		

Festoil-ISO 4113

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 50 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV MM Dimension V MM

46

WPP 001/4 SAV 3,3 d

2. Edition

VA 4/100 H 1600 CR 141-1 . 0 460 304 141

supersedes

4.78

company.

Saviem

engine:

712..

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

 $0,5 \, \text{mm} \pm 0,02 (\pm 0,04)$

1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	1200	5,2-6,0	mm		
1.2 Supply pump pressure	1200	5,7-6,2	kp/cm²		ĺ
1.3 Full-load delivery without charge-air pressure	900	54,5-55,5	cm ³ /1000 strokes	Ì	2,5
Full-load delivery with charge-air	-		cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	300	7,0-13,0	cm ³ /1000 strokes		3,0
1.5 Start 196 bar	100	mind.80,0	cm ³ /1000 strokes]
1.6 Full-load speed regulation	1720	7,0-13,0	cm ⁹ /1000 strokes		

2.1 Timing device	rev/min	430-580(400-610)	1200	1500-1600
	mm	Start	(4,9-6,3)	8,0-8,7(7,7-9,0)
2.2 Supply pump	rev/min	200	1200	1500
.,,,,	kp/cm²	1,3-1,8(1,1-2,0)	(5,5-6,4)	6,8-7,3(6,6-7,5)
Overflow delivery	rev/min	500		1600
	cm ³ /10 s	55-100(40-110)		55.100(40-110)

2.3 Fuel deliveries

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1770-1860 (1750-1880) 1720 1550 900 500	0 48,5-51,5 46,5-50,5	(6,0-14,0) (47,5-52,5) (54,0-56,0) (45,5-51,5)	
	Stop	1600	0		
Idle stop	Full	360-430 (340-450) 300	0	(6,0-14,0)	
End stop	Start	1000 120-220	mind.80,0		·

Testoil-ISO 411

Angle to the stop-plate	Pr	e-setting dimensions
Pump	PL	qmp
$\alpha = 25 \pm 4^{\circ}$	Di	mension IV = 4,00 mm
$^{\beta} = 45 \pm 8^{\circ}$	Di	mension V = 24,65 mm
y = 30 - 8°		
8 = 60 + 8°		

WPP 001/4 SAV 5,2a 3

2. Edition

VA 6/100 H 1000 CR 124-8 0 460 306 197

supersedes company.

5.76 Saviem 597-50-061

engine:

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

estoil-ISO 4113

 $0.2 \quad mm \quad \pm 0.02 \ (\pm 0.04)$

					e setting see revers	
1.	Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1	Timing device travel	800	2,0-3,0	mm		
1.2	Supply pump pressure	800	4,3-4,8	kp/cm ²		
1.3	Full-load delivery without charge-air pressure	700	54,0-55,0	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4	Idle speed regulation	300	7,0-13,0	cm ³ /1000 strokes		2,5
1.5	Start	100	mind.95,0	cm ³ /1000 strokes		
16	Full-load speed regulation	1070	21,0-29,0	cm ³ /1000 strokes		

2. Test Sp	ecificati	ONS Checking values in brac	kets	
2.1 Timing device	rev/min mm	Start 550-650(520-680) 0,8-1,8(0,5-1,5)	700 800 (1,7-3,3)3,1-4,1(900 950-1070 (2,8-4,4)4,3-5,0(4,0-5,3)
2.2 Supply pump	rev/min kp/cm²	200 1,3-1,8(1,1-2,0) 500	800 (4,1-5,0)	1000 4,9-5,4(4,7-5,6) 1000
Overflow delivery	rev/min cm ³ /10 s	55-100(40-110)		55-100(40-110)

2	2	c.	1	del		
Z	J	ΓL	ıeı	ae	IIVE	He:

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1090-1170 (1070-1190) 1070	0	(20,0-30,0)	
		1000 700		(50,5-55,5) (53,5-55,5)	
		500	54,5-57,5	(53,5-58,5)	
	Stop	1000	0		
Idle stop	Full	360-430 300	0	(6,0-14,0)	
	Start	100	mind.95,0		
End stop		150-250			

Angle to the stop-plate	Pre-setting dimensions
Pump $a = 25 \pm 4^{\circ}$ $b = 35 \pm 8^{\circ}$ $b = 30 - 8^{\circ}$ $b = 60 + 8^{\circ}$	Pump Dimension IV = 1,6 mm Dimension V = 24,6 mm

WPP 001/4 SAV 3,3e

Edition

VA 4/100 H 1600 CR 147-7 0 460 304 169

2. Test Specifications

2.1 Timing device rev/min

supersedes

4.78

company

Saviem 720-01-01

engine:

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers **Test Intructions and Test Equipment**

1500-1600

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

 $0,5 \text{ mm} \pm 0.02(\pm 0.04)$

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ²	
1.1 Timing device travel	1200	5,2-6,0	mm			
1.2 Supply pump pressure	1200	5,5-6,0	kp/cm ²			
1.3 Full-load delivery without charge-air pressure	900	61,0-62,0	cm ³ /1000 strokes		2,5	
Full-load delivery with charge-air pressure			cm ³ /1000 strokes			
1.4 Idle speed regulation	300	7,0-13,0	cm ³ /1000 strokes		3m0	
1.5 Start	100	mind.80,0	cm ³ /1000 strokes			
1.6 Full-load speed regulation	1750	8,0-16,0	cm ³ /1000 strokes			

1200

Checking values in brackets

430-580(400-610)

2.2 Supply pump Overflow delivery	mm rev/min kp/cm² rev/min cm³/10 s	Start 200 1,0-1,5(0,8- 500 55-100(40-		1200 (5,3-6,2)	8,0-2,7(7,7-9,0) 1600 6,9-7,4(6,7-7,6) 1600 55-100(40-110)
2.3 Fuel deliveries Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1800-1920 (1780-1940) 1750 1550 900 500	0 58,5-61,5 55,0-59,0	(7,0-17,0) (57,5-62,5) (60,5-62,5) (54,0-60,0)	
Idle stop	Full Start	380-480 (360-500) 300 100 120-220	0, mind.80	(6,0-14,0)	

Festoil-ISO 4113

Angle to the stop-plate	Pre-setting dimensions .
Pump	Pump
$a = 25 \pm 4^{\circ}$	Dimension IV $=$ 3,50 mm
$= 50 \pm 8^{\circ}$	Dimension $V = 24,65 \text{ mm}$
δ = 30 - 8°	
= 60 + 8°	

WPP 001/4 SAV 5,2a 2 2. Edition

VA 6/100 H 1250 CR 124-7 · 0 460 305 195

supersedes

5.75

company.

Saviem 797-50-051

engine:

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

 $0,2 \quad mm \pm 0,02(\pm 0,04)$

1.	Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1	Timing device travel	1100	4,65-4,75	mm		
1.2	Supply pump pressure	1100	5,6-6,1	kp/cm²		
1.3	Full-load delivery without	1100	64,0-65,0	cm ³ /1000 strokes		2,5
	charge-air pressure Full-load delivery with charge-air		~-	cm ³ /1000 strokes		
1.4	pressure Idle speed regulation	300	7,0-13,0	cm ⁹ /1000 strokes		3,0
1.5	Start	100	mind.80,0	cm ³ /1000 strokes		
1.6	Full-load speed regulation	1350	16,0-24,0	cm ³ /1000 strokes		

2. Test Sp	ecificati	Checking values in brack 550-700 (520-730)	kets 700	1100	1120-1270	
2.1 Timing device	rev/min					٥١
	mm	Start 0	1,5-1,5(0,2-1	,8)(4,35	5-5,05)5,2-5,9(4,9-6	,2)
2.2 Supply summ	rev/min	200		1100	1250	
2.2 Supply pump	kp/cm²	1,4-1,9(1,2-2,1)	(5,4	-6,3) 6,	,1-6,6(5,9-6,8)	
		500			1250	
Overflow delivery	rev/min cm ³ /10 s	55-100(40-110)			55-100(40-110)	
2.2 Evol deliveries						

23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1380-1430 (1360-1450) 1350 1250-1270 1230 1100 500	0 Start 63,5-66,5 53,0-57,0	(15,0-25,0) (62,5-67,5) (63,5-65,5) (52,0-58,0)	
End stop	Full Start	370-430 (350-450) 300 100 150-250	0 mind. 80,0	(6,0-14,0)	



Angle to the stop-plate	Pre-setting dimensions		
Pump $a = 25 \pm 4^{\circ}$ $\beta = 50 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 2,4 mm Dimension V = 24,6 mm		

WPP 001/4 SAV 5,2 e Edition

VA 6/100 H 1500 CR 124-9 0 460 306 230

2. Test Specifications

supersedes company:

12.78 Saviem

engine.

797 Marine

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

 $0,2 \text{ mm} \pm 0,02(\pm 0,04)$ Pre-stroke setting

		Fierselving see reverse side			
1. Settings	rey/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ²
1.1 Timing device travel	1100	3,6-4,4	mm		
1.2 Supply pump pressure	1100	5,7-6,7	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	1100	78,0-79,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	300	9,0-15,0	cm ³ /1000 strokes		3,0
1.5 Start	100	mind.80,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1580	36,0-44,0	cm ³ /1000 strokes		

Checking values in brackets

2.1 Timing device	rev/min	800	1100	1300		1350-1500
	mm	0,5-1,8(0,2-	2,1) (3,3-4,	7) 5,6-6,4(5	,3-6,7)	7,0-7,7(6,7-8,0)
2.2 Supply pump	rev/min	200	1100		•	1300
	kp/cm²	1,4-1,9(1,2-	2,1)(5,5-6,9))		6,7-7,2(6,5-7,4)
Overflow delivery	rev/min	500				1500
	cm ³ /10 s	55-100(40-11	0)			55-100(40-110)
23 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air	pressure kp/cm ²
End stop	Full	1650 1580 1450 1100 500		(35,0-45,0) (75,5-80,5) (77,5-79,5) (65,0-69,0)		
	Stop	1500	0			
idle stop	Full	420-480 (400-500) 300	0	(8,0-16,0)		
	Start	100	mind. 80,0			
End stop		150-250				

Pre-setting dimensions
Pump
Dimension IV = $3,50 \text{ mm}$
Dimension $\forall = 24,65 \text{ mm}$
+

0,5 mm

 $\pm 0,02(\pm 0,04)$

46

wpp 001/4 SAV 3,3 b 1 2. Edition

En

VA 4/100 1500 CR 141-9 0 460 304 197

supersedes

company

engine:

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Testoil-ISO 4113

Pre-stroke setting

	Pr	e-setting see rever	se side		
1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ²
1.1. Timing device travel	1200	5,1-6,1	mm	1	1
1.2 Supply pump pressure	1200	5,9-6,4	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	1000	64,0-65,0	cm ³ /1000 strokes	;	2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4 Idle speed regulation	300	7,0-13,0	cm ² /1000 strokes		3,0
1.5 Start (autom.)	100	mind.80,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1600	23,5-31,5	cm ⁹ /1000 strokes	,	

2.1 Timing device	rev/min	800	1200	1400	1400-1520
	mm	1,9-2,9(1,6-3,2)	(4,8-6,4)6,4	-7,4(6,1-	-7,7)7,0-7,7(6,7-8,0)
2.2 Supply pump	rev/min	200	1200		1500
	kp/cm²	1,3-1,9(1,1-2,1)	(5,7-6,6)		7,2-7,7(7,0-7,9)
Overflow delivery	rev/min	500			1500
	cm ³ /10 s	55-100(40-110)			55-100(40-110)

	cm ³ /10 s	55-100(40-11	10) 55-100(40-110)		55-100(40-110)		55-100(40-110)
2.3 Fuel deliveries							
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²		
End stop	Full	1690-1800 (1670-1820) 1600 1450 1000 500	0 59,5-62,5 58,5-61,5	(22,5-32,5) (58,5-63,5) (63,5-65,5) (57,5-62,5)			
	Stop	1500	0				
ldle stop	Full	400-500 (380-520) 300	0	(6,0-14,0)			
End stop	. Start	100 110-210	mind. 80,0		·		

Angle to the stop-plate	Pre-setting dimensions
Pump	Pump
$\alpha = 25 \pm 4^{\circ}$	Dimension IV = 3,00 mm
$\beta = 45 \pm 8^{\circ}$	Dimension V = 24,65 mm
, = 30 - 8°	
δ = 60 + 8°	

 $0.5_{mm} \pm 0.02 (\pm 0.04)$

46

WPP 001/4 MAN 5,2d

Edition

En

Testoil-ISO 4113

VA 6/100 H 1500 CR 181-4 0 460 306 225

2 Test Specifications

Pre-stroke setting

supersedes 9.78

company MAN

engine: Saviem 79702/03

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ²
1.1 Timing device travel	1200	5,7-6,5	mm		
1 2 Supply pump pressure	1200	6, 2-6, 7	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	1200	63,0-64,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1 4 Idle speed regulation	300	13,0-19,0	cm ³ /1000 strokes		3,0
1 5 Start	100	mind.75,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1600	28,0-36,0	cm ³ /1000 strokes		

2 1 Timing device	rev/min	Checking value 700		1200	1500
	mm	1,1-2,1(0,8-	2,4)	(5,4-6,8)	7,0-7,7(6,7-7,9)
22 Supply pump	rev/min	200		1200	1500
	kp/cm²	1,6-2,1(1,4-	2,3)	(6,0-6,9)	7,2-7,7(7,0-7,9)
Overflow delivery	rev/min	500			1500
	cm ³ /10 s	55-100(40-1	10)		55-100(40-110)
23 Fuel deliveries				<u></u> -	
Speed control lever	Delivery lever	rev/min	cm ³ /1000 stroke	s	Charge-air pressure kp/cm ²
End stop	Full	1700-1750 (1680-1770) 1600 1500 1200 500		(27,0-37,0) (61,0-66,0) (62,5-64,5) (46,0-52,0)	
	Stop	1500	0		
Idle stop	Full	420-470 (400-490) 300	0	(12,0-20,0)	
Ę	Start	100	mind.75,0	•	
End stop	1	110-210			

Angle	e to the stop-plate	Pre-setting dimensions	
Pump	•	Pump	
α	= 25 ± 4°	Dimension IV = 3,80 mm	
β	= 50 ± 8°	Dimension v = 24,65 mm	
γ	= 30 - 8°		
δ	= 60 + 8°		

WPP 001/4 STE 6,6 a

Edition

VA 6/100 H 1100 CR 178-1 · 0 460 306 209

supersedes

5.77

company engine

Steyr WD 612.40

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers

Test Intructions and Test Equipment **VDT-WPP 161/4 B**

Pre-setting see reverse side

Pre-stroke setting

 $0.1_{mm} \pm 0.02(\pm 0.04)$

1. Settings 6	rev/min	Settings	Charge-air press kp/cm ²	Difference in delivery cm ²
1.1 Timing device traval	900	4,7-5,7 mm		
1 2 Supply pump pressure	900	5,0-5,5 kp/cm²		
1 3 Full-load delivery without charge-air pressure	800	78,5-79,5 cm ³ /1000 stro	ì	2,5
Full-load delivery with charge air pressure	300	12,0-18,0 cm ³ /1000 stro	ikes	3,0
1 4 Idle speed regulation 1 5 Start	100	mind.90,0 cm ³ /1000 stro	kes	3,0
1 6 Full-load speed regulation	1200	43,5-51,5 cm ³ /1000 stro	kes	

2. Test Sp	ecificati	ONS Checking values in brackets	000	
2.1 Timing device	rev/min	500	900	
•	mm	0,6-1,6(0,3-1,9)	(4,4-6,0)	
		200	900	1100
22 Supply pump	rev/min kp/cm²	1,5-2,0(1,3-2,2)	5,0-5,5(4,8-5,7)	5,4-5,9(5,2-6,1)
		500		1100
Overflow delivery	rev/min cm ³ /10 s	55-100(40-110)		55-100(40-110)

2	3	Fuel	deliv	29110

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strakes	Charge-air pressure kp/cm [?]
End stop	Full	1270-1320 (1250-1340) 1200 1100 800 500	0 (42,5-52,5) 70,75-73,25(69,75-74,25 (78,0-80,0) 72,0-75,0 (71,0-76,0)	
	Stop	1100	0	•
Idle stop	Full	450-500 (430-520) 300	0 (11,0-19,0)	
End stop	Start	100 120-220	mind.90,0	

Angle to the stop-plate	Pre-setting dimensions
Pump α = 25 ± 4° β = 40 ± 8° γ = 30 - 8° δ = 60 + 8°	Pump Dimension IV = 0,60 mm Dimension V = 23,65 mm

WPP 001/4 STE 6,0k

Edition

VA 6/1000 H 1150 CR 160-2. 0 46@ 306 224

supersedes

10.77

company.

Steyr WD 610.44

engine:

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-stroke setting

 $0,1 + 0,02(\pm 0,04)$

Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	900	3,2-4,2	mm ,		
1.2 Supply pump pressure	900	4,7-5,2	kp/cm ²		
1.3 Full-load delivery without	1150	68,5-69,5	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	300	17,0-23,0	cm ² /1000 strokes		3,0
1.5 Start	100	mind.90,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1250	41,0-49,0	cm ¹ /1000 strokes		

2. Test Sp	ecificatio	NS Checking values			4000 4450
2.1 Timing device	rev/min	300-450(270-	480)	900	1000-1150
	mm	Start	,	(2,9-4,5)	5,2-4,9(3,9-5,2)
2.2 Supply pump	rev/min	200		900	1150
2.2 Supply pamp	kp/cm²	1,3-1,8(1,1-	2,0)	(4,5-5,4)	5,5-6,0(5,3-6,2)
		500			1150
Overflow delivery	rev/min cm ³ /10 s	55-100(40-11	0)		55-100(40-110)
2.3 Fuel deliveries	4				
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	•	Charge-air pressure kp/cm²
End stop	Full	1340-1420 (1320-1440) 1250 1200-1230 1150 900 500	0 Start 65,5-67,5 63,5-66,5	(40,0-50,0) (68,0-70,0) (64,5-68,5) (62,5-67,5)	
	Stop	1150	0		
idle stop	Full	420-500 (400-520) 300	0	(16,0-24,0)	
End stop	Start	100 120-220	mind.90,0		·

Festoil-ISO 4113

Angle to the stop-plate	Pre-setting dimensions
Pump a = 25 ± 4° B = 50 ± 8° Y = 30 - 8° b = 60 + 8°	Pump Dimension IV = 1,60 mm Dimension V = 24,65 mm

WPP 001/4 STE 5,0a

Edition

VA 6/100 H 1150 CR 160-4 . 0 460 306 242

supersedes 4.80 Steyr company WD 611.40

engine:

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

 $0,2 \text{ mm} \pm 0,02(\pm 0,04)$

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1.	Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ²
1.1	Timing device travel	700	2,2-3,2	mm		
1.2	Supply pump pressure	1100	6,1-6,6	kp/cm ²		
1.3	Full-load delivery without charge-air pressure	1100	56,0-57,0	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4	Idle speed regulation	300	16,0-22,0	cm ³ /1000 strokes		
1.5	Start	100	mind.90,0	cm ³ /1000 strokes		
1.6	Full-load speed regulation	1250	38,0-46,0	cm ⁹ /1000 strokes		

1 Timing device	rev/min		700	1100
	mm	Start	(1,9-3,5)	5,5-6,3(5,2-6,6)
2 Supply pump	rev/min	200	1100	1150
	kp/cm²	1,5-2,0(1,3-2,2)	(5,9-6,8)	
verflow delivery	rev/min	500		1150
vernow denvery	cm ³ /10 s	55-100(40-110)		55-100(40-110)

Overflow delivery	ery rev/min 500 cm ³ /10 s 55-100		-110)		55-100(40-110)	
2.3 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	i	Charge-air pressure kp/cm²	
End stop	Full	1360-1410 (1340-1430) 1250 1100 900 500	55,3-57,7 56,5-60,5	(37,0-47,0) (55,5-57,5) (54,3-58,7) (55,5-61,5)		
	Stop	1150	0	·		
Idle stop	Full	430-480 (410-500) 300	0	(15,0-23,0)	•	
End stop	Start	100 260-340	mind.90,0			

Angle to the stop-plate	Pre-setting dimensions		
Pump $ \alpha = 25 \pm 4^{\circ} $ $ \beta = 50 \pm 8^{\circ} $ $ \gamma = 30 - 8^{\circ} $ $ = 60 + 8^{\circ} $	Pump Dimension IV = 4,20 mm Dimension V = 25,65 mm		

WPP 001/4 STE 6,0 f 3

Edition

VA 6/100 H 1400 CR 160-1 0 460 306 151

supersedes

Steyr WD 610.00

company engine

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

 $0.1_{mm} \pm 0.02(\pm 0.04)$

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	1000	3,1-3,9	mm		
1 2 Supply pump pressure	1000	5,2-5,7	kp/cm²		
1.3 Full-load delivery without charge-air pressure	1200	69,0-71,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air	-		cm ³ /1000 strokes		
pressure 1 4 Idle speed regulation	300	9,5-15,5	cm [#] /1000 strokes	1	3,0
1.5 Start	100	mind.90,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1530	26,0-34,0	cm ³ /1000 strokes		

En

2. Test Sp	ecification	ns Checking values in brackets 450-600 (420-630)	1000	110-1250
2.1 Timing device	rev/min		(2,8-4,2)	4,3-5,0(4,0-5,3)
	mm	Start 100	1000	1400
2.2 Supply pump	rev/min kp/cm²	1,5-2,0(1,3-2,2)	(5,0-5,9)	6,3-6,8(6,1-7,0)
		500		1400
Overflow delivery	rev/min cm ³ /10 s	55-100(40-110)		55-100(40-110)

23	Fuel	deliveries
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Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	Charge-air pressure kp/cm²
End stop	Full	1650-1730 (1630-1750) 1600 1530 1400 1200 500	0 max.5,0 (25,0-35,0 66,5-68,5 (65,5-69,5 (68,5-71,5 63,0-67,0 (62,0-68,0	5) 5)
	Stop	1400	0	
Idle stop	Full	420-490 (400-510) 300 100 120-220	0 (8,5-16,5 mind.90,0)

BOSCH

Angle to the stop-plate	Pre-setting dimensions
Pump α = 25 ± 4° β = 55 ± 8° γ = 30 - 8° δ = 60 + 8°	Pump Dimension IV = 2,20 mm Dimension V = 24,60 mm

46

WPP 001/4 STE 6,0 f 1

2. Edition

VA 6/100 H 1150 CR 160 0 460 306 143 supersedes company 5.72 Steyr

engine:

WD 610.50

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment VDT-WPP 161/4 B

VDT-WPP 161/4 B
Pre-setting see reverse side

Pre-stroke setting

 $0,1_{mm} \pm 0,02(\pm 0,04)$

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	800	2,6-3,4	mm		
1.2 Supply pump pressure	800	4,7-5,2	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	1100	62,0-63,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 lidie speed regulation	300	7.0-13.0	cm ² 1000 strokes	l	3.0
1 5 Start	100	mind.80,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1250	21,0-29,0	cm ³ /1000 strokes		

2. Test Sp	ecificati	Ons Checking values in brackets	800	1050-1150
2.1 Timing device	rev/min	300-450 (270-480) Start	(2,3-3,7)	4,3-5,0(4,0-5,3)
	mm	200	800	1150
22 Supply pump	rev/min kp/cm²	1,5-2,0(1,3-2,2)	(4,5-5,4)	5,9-6,4(5,7-6,6)
	Kp/cm	500		1150
Overflow delivery	rev/min cm ³ /10 s	55-100(40-110)		55-100(40-110)

23	Fuel	deliv	eries
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Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	Charge-air pressure kp/cm²
End stop	Full	1280 1250 1100 900 500	max.10,0 (20,0- (61,5- 61,0-63,0 (60,0- 61,0-65,0 (60,0-	53,5) 54,0)
	Stop	1150	0	
Idle stop	Full	370-420 (350-440) 300 100	0 (6,0-1 mind.80,0	1,0)
End stop	Start	120-220		•

Testoil-ISO 4113

Angle to the stop-plate	Pre-setting dimensions
Pump α = 25 ± 4° β = 40 ± 8° γ = 30 - 8° = 60 + 8°	Pump Dimension IV = 2,0 mm Dimension V = 24,6 mm

CR 141-5

46

WPP 001/4 SAV 3,3 a 1 3 Edition

supersedes

4.78

company.

Saviem

engine:

712

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

0 460 304 140 0 460 304 161

VA 4/100 H 1600 CR 141

 $0,5 \text{ mm} \pm 0,02(\pm 0,04)$

1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ²
1.1 Timing device travel	1300	6,2-7,2	mm .		
1.2 Supply pump pressure	1300	6,0-6,5	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	1000	49,5-50,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	300	7,0-13,0	cm ³ /1000 strokes	 	3,0
1.5 Start	100	mind.80,0	cm ³ /1000 strokes		
1.5 Full-load speed regulation	1650	26,0-34,0	cm ⁹ /1000 strokes		

2. Test Sp	ecification	018 0-500(43)	alues: Barackets 700	1300	1450-1600
2.1 Timing device	mm	Start	1,4-2,4(1,1-		8,0-8,7(7,7-9,0)
2.2 Supply pump	rev/min kp/cm²	20 1,1-1,6(0,	_	1300 (5,8-6,7) 7,	1600 5-8,0(7,3-8,2)
Overflow delivery	rev/min cm ³ /10 s	50-100(40-			1600 55-100(40-110)

23	Fuel	delive	eries

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	Charge-air pressure kp/cm²
End stop	Full	1730-1800 (1710-1820) 1720 1650 1580 100 500	0 max.13,0 (25,0-35 41,0-44,0 (40,0-45 (49,0-51 40,0-44,0 (39,0-45	,0) ,0)
	Stop	1600	0	
Idle stop	Full Start	360-430 (340-450) 300 100 110-220	0 (6,0-14, mind.80,0	0)

Testoil-ISO 4113

BOSCH

Angle to the stop-plate		Pre-setting dimensions
Pump		Pump
α =	: 25 <u>+</u> 4°	Dimension IV = 4,0 mm
	= 45 <u>+</u> 8°	Dimension V = 24,65 mm
Y 	= 30 - 8°	
δ :	= 60 + 8°	

 $0.5_{mm} \pm 0.02(\pm 0.04)$

46

WPP 001/4 SAV 3,3 b 6

1. Edition

En

VA 4/100 H 1350 CR 141-8 · 0 460 304 182

Pre-stroke setting

supersedes

company:

Saviem 712...

engine:

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

VDT

Pre-setting see reverse side

1. Settings	rev/min	Settings	C	harge-air press. p/cm²	Difference in delivery cm ³
1.1 Timing device travel	1000	3,2-4,0 mm			:
1.2 Supply pump pressure	1000	5,5-6,0 kp/d	:m²		
1.3 Full-load delivery without	900	51,5-52,5 cm ³	/1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air		cm ³	/1000 strokes		
pressure 1.4 Idle speed regulation	300	7,0-12,0 cm ⁵	/1000 strokes		3,0
1.5 Start	100	mind.80,0 cm ³	1000 strokes		
1.6 Full-load speed regulation	1450	16,0-24,0 _{cm}	/1000 strokes		

2. Test Spe	ecificatio	ns Checking values in brackets		
	rev/min mm	470-620(440-650) 700 0,8-1,8(0,5-2,1)(2,9-4,3)	1000 1200 1250-1400) 4,3-5,3(4,0-5,6) 5,2-5,9(4,9-6,2))
2.2 Supply pump	rev/min kp/cm²	200 1,7-2,2(1,5-2,4) 500	(5,3-6,2) 1350	
Overflow delivery	rev/min cm ³ /10 s	55-100(40-110)	55-100(40-110)	
2.3 Fuel deliveries	Delivery level	rev/min cm ³ /1000 strokes	Charge-air pressure kp/cm²	

Delivery lever	rev/min	cm ³ /1000 strokes	Charge-air pressure kp/cm ²
Fult	1490-1550 (1470-1570) 1450 1370-1400 1350 900 500	0 (17,0-2 Start 47,5-50,5 (46,5-5 (51,0-5 53,5-56,5 (52,5-5	
Stop	1350	0	·
Full	370-430 (350-450) 300	0 (6,0-14	4,0)
Start	100 110-210	mind.80,0	·
	Full Stop	Full 1490-1550 (1470-1570) 1450 1370-1400 1350 900 500 Stop 1350 Full 370-430 (350-450) 300 100	Full 1490-1550 0 (1470-1570) 1450 (17,0-2 1370-1400 1350 900 500 53,5-56,5 (52,5-5) (51,0-5) 1350 0 (51,0-5) 1350 0 (51,0-5) 1350 0 (6,0-14) 100 mind.80,0

Angls to the stop-plate	Pre-setting dimensions	
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 4,60 mm Dimension V = 24,60 mm	

WPP 001/4 STE 6,6 b

Edition

VA 6/10 H 1400 CR 160-3 0 460 306 237

supersedes 1.79

company

engine:

Steyr WD 612.00-LKW

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches**

Test Intructions and Test Equipment

VDT-WPP 161/4 B

@ setting see reverse side

Pre-stroke setting

 $0.1 \text{ mm} \pm 0.02(\pm 0.04)$

1. Settings	rev/min	Settings		Charge-air press.	Difference in delivery cm ³
1.1 Timing device travel	900	3,9-4,9	mm		
1.2 Supply pump pressure	1100	5,4-5,9	kp/cm ²		
1.3 Full-load delivery without	1400	69,0-70,0	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1 4 Idle speed regulation	320	9,0-15,0	cm ³ /1000 strokes		3,0
1 5 Start	100	mind.90,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1500	36,0-44,0	cm ¹ /1000 strakes	,	

2. Test Sp	ecifications	Checking va	lues in brackets	900	1100
2.1 Timing device	rev/min		600		
	mm	Start	1,5-2,2(1,2	2-2,5)(3,6-5,2) 5,1-	5,9(4,8-6,2)
_		200		1100	1400
2.2 Supply pump rev/min kp/cm²		1,5-2,0(1,3-2,2)	(5,2-6,1)(6,3-6	,8(6,1-7,0)
		500			1400
Overflow delivery	rev/min cm ³ /10 s	55-100((40-110)	55-	100(40-110)

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm/
End stop	Full	1650-1750 (1630-1770)	0		
•		1570	max. 10,0	/or o 45 0)	
		1500 1400		(35,0-45,0) (68, 5-70,5)	
		1100	71.0-73.0	(68,5-70,5) (70,0-74,0)	
		500	64,5-68,5	(63,5-69,5)	
		1400	0		
	Stop				
		450 500	ļ		,
idle stop	Full	450-500 (430-520)	0		
		320		(8,0-16,0)	
End stop		120-220			
· F	Start				

Angle to the stop-plate		Pre-setting dimensions
Pump		Pump
a	= 25 <u>+</u> 4°	Dimension IV = 1,40 mm
β	= 55 ± 8°	Dimension V = 24,65 mm
γ δ	= 30 - 8°	
U	= 60 + 8°	

WPP 001/4 SAV 5,2 b 1

Edition

VA 6/110 H 1450 CR 169-1 0 460 316 020

supersedes

company:

Saviem 798-10-13

engine.

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers

Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

 $0,4 \text{ mm} \pm 0,02 (\pm 0,04)$ Pre-stroke setting

1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	1000	4,9-5,9	mm	0	
1.2 Supply pump pressure	1000	5,5-6,0	kp/cm ²	0	
1.3 Full-load delivery without	500	60,0-63,0	cm ³ /1000 strokes	0	2,5
charge-air pressure Full-load delivery with charge-air	900	80,0-81,0	cm ³ /1000 strokes	0,48	
pressure 1.4 Idle speed regulation	300	12 0-19 0	cm ⁹ /1000 strokes	n	
1.5 Start	100	mind 100 0	cm ³ /1000 strokes	n	
1 6 Full-load speed regulation	1550	36.0-44.0	cm ³ /1000 strokes	0.68	

2. Test Sp	ecificati	ONS Checking values in brackets			
2.1 Timing device	rev/min	450-550(420-580)	650	1000	1050-1200
	mm	Start 1,1	-2,1(0,8	-2,4)(4,6-6	,2)6,1-6,8(5,8-7,1)
22 Supply pump	rev/min	200		1000	1450
	kp/cm²	1,4-1,9(1,2-2,1)		(5,3-6,2)7	,1-7,6(6,9-7,8)
Overflow delivery	rev/min	500			1450
	cm ³ /10 s	55-100(40-110)			55-100(40-110)

S

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	Charge-air pressure kp/cm 3
End stop	Full	1650-1710 (1630-1730)	0	0,68
•		1550 1480-1520	(35,0-45,0) Start	0,68
		1450	76,5-79,5 (75,5-80,5)	
		900	(79,5-81,5)	
		750	(73,5-75,0)	
		500	60,0-63,0 (59,0-64,0)	0
	Stop	1450	0	
Idle stop	Full	370-420	0	
		(350-440)		
		300	(11,0-19,0	
	Start	100	mind.100,0	
End stop		110-220		·
Eile Soob			1	1

Angle to the stop-plate	Pre-setting dimensions		
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 50 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 5,0 mm Dimension V = 24,6 mm		

WPP 001/4 SAV 3,3 b 3

1. Edition

VA 4/100 H 1500 BR 141-4 0 460 304 146

supersedes

Saviem

engine.

company 712

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers **Test Intructions and Test Equipment**

VDT-WPP 161/4 B

0,1 _{mm} Pre-stroke setting 0.1 mm Plunger lift 0.3 mm at 23° BTDC

Pre-setting see reverse side Charge-air press. kp/cm² Difference in delivery rev/min **Settings** 1. Settings 800 4,8-5,8 1.1 Timing device travel

800 4,5-5,0 kp/cm² 1.2 Supply pump pressure 1000 57,5-58,5 cm³/1000 strokes 1,5 1.3 Full-load delivery without charge-air pressure cm³/1000 strokes Full-load delivery with charge-air 9,5-15,5 300 3,0

cm³/1000 strokes 1.4 Idle speed regulation mind.80,0 100

1600

Start

cm3/1000 strokes 26,0-34,0

cm¹/1000 strokes

2. Test Specifications Checking values in brackets 2.1 Timing device rev/min

340-520(310-550)

100

1,1-1,6(0,9-1,8)

500

800

1350-1480 13,7-14,4(13,4-14,7)

(4,5-6,1)800

1500

(4,6-6,0)6,8-7,3(6,6-7,5)

mind. 25

1500 85-125(70-140)

23 Fuel deliveries

Overflow delivery

22 Supply pump

1.6 Full-load speed regulation

mm

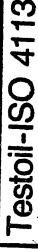
rev/min

kp/cm²

rev/min

cm³/10 s

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1650-1720 (1630-1740)	0		
		1600 1480	58,5-61,5 ((25,0-35,0) (57,5-62,5)	
		1000	52,0-55,5	(57,0-59,0)	
		500	52,0-55,5 ((51,0-56,5)	
					1
	Stop	1500	0		
Idle stop	Full	370-480	0		
		(350-500)		· •	
		300		8,5-26,5)	
	0	100	mind.80,0		
End stop	Start	120-220			



ES

Angle to the stop plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 45 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 2,0 mm Dimension V = - mm

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WPP 001/4 SAV 3,3 a 1

1. Edition

VA 4/100 H 1600 BR 141-1 0 460 304 082

supersedes

Saviem

company engine

7120-01/02

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting 0,1 mm Plunger lift 0.3 mm at 23° BTDC

1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	800 ′	4,8-5,8	mm		
1.2 Supply pump pressure	800	4,5-5,0	kp/cm ²		
1.3 Full-load delivery without	1000	53,0-54,0	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	300	9,5-15,5	cm ³ /1000 strokes		3,0
1 5 Start	100	mind.80,0	cm ³ /1000 strokes		d g
1.6 Full-load speed regulation	1630	42,0-48,0	cm ³ /1000 strokes		

2. Test Spo	rev/min	ns Checking value 340-520 (310-5	550)	800		1390-1570
_	mm	Start		(4,5-6,1)	13,	7-14,4(13,4-14,7)
2 2 Supply pump	rev/min kp/cm²	100 1,1-1,6(0,9-1	,8)	800 (4,3-5,2)		1600 0-7,5(6,8-7,7)
Overflow delivery	rev/min cm ³ /10 s	500 mind.25			8	1500 5-125(70-140)
2 3 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 stroke	es		Charge-air pressure kp/cm²
End stop	Full	1740-1860 (1720-1880) 1770 1630 1550 1000 500	!	(41,0-49 5 (51,5-56 (52,5-54 5 (46,5-51	.5)	
	Stop	1600	0			
ldle stop	Full	370-480 (350-500) 300	0	(8,5-16,	5)	
End stop	Start	100 120-220	mind.80,)		

Angle to the stop-plate	Pre-setting dimensions
Pump α = 25 ± 4° β = 45 ± 8° γ = 30 - 8° δ = 60 + 8°	Pump Dimension IV = - IMM Dimension V = - IMM

2. Test Specifications Checking values in brackets

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WPP 001/4 SAV 3,3 b 4

1. Edition

VA 4/100 H 1600 BR 141-5 · 0 460 904 148

supersedes

company Saviem

engine.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting 0,1 mm Plunger lift 0.3 mm at 23° BTDC

1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	800	4,8-5,9	mm		
1.2 Supply pump pressure	800	4,2-4,7	kp/cm ²		
1.3 Full-load delivery without	1000	47,5-49,5	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	300	9,5-15,5	cm ³ /1000 strokes		3,0
1.5 Start	100	mind.80,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1640	37,0-43,0	cm ³ /1000 strokes		

2.1 Timing device	rev/min	340-520(310-	-550)	800		1390-1570
	mm	Start	(4	1,5-6,1)	13,7	-14,4(13,4-14,7)
2.2 Supply pump	rev/min kp/cm²	100 1,1-1,6(0,9-	-1,8) (4	800 1,0-4,9)	7 , 0	1600 -7,5(6,8-7,7)
Overflow delivery	rev/min cm ³ /10 s	500 mind.25			55-	1000 125(40-140)
23 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 stroke	es.		Charge-air pressure kp/cm²
End stop	Full	1740-1859 (1720-1870) 1770 1640 1550 1000 500	0 < 5,0 45,5-48, 41,0-44,	(36,0.5 5 (44,5.6 (47,0.0) 0 (40,0.0)	-44,0) -49,5) -50,0) -45,0)	
Idle stop	Full	370-480 (350-500) 300	0	(8,5-	16,5)	
End stop	Start	100 120-200	mind.80,	0		

Festoil-ISO 4113

BOSCH

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 45 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = - mm Dimension V = - mm According to the wear-parts list

WPP 001/4 SAV 3,3 b 5

1. Edition

VA 4/100 H 1500 BR 141-6 0 460 304 151

supersedes

company Saviem 01-01 engine

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting 0.1 mm Plunger lift 0.3 mm at 23° BTDC

2. Test Specifications

1.	Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1	Timing device travel	1200	9,2-10,2	mm .		
1.2	Supply pump pressure	1200	5,5-6,0	kp/cm ²		
1.3	Full-load delivery without charge-air pressure	1000	53,0-54,0	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4	Idle speed regulation	300	9,5-15,5	cm ³ /1000 strokes	j	3,0
1.5	Start	100	mind.80,0	cm ³ /1000 strokes		
1.6	Full-load speed regulation	1600	31,0-39,0	cm ³ /1000 strokes		

Checking values in brackets

2.1 Timing device	rev/min	370-520(340	-550)	1200		1400-1500
L. I Thining Goriso	mm	Start	((8.9-10,5)	12,7	-13,4(12,4-13,7)
2.2 Supply pump	rev/min kp/cm²	100 1,1-1,6(0,9) -1, 8	1200 (5,3-6,2)	6,5	1500 -7,0(6,3-7,2)
Overflow delivery	rev/min cm ³ /10 s	500 mind.25			8 5 -	1500 -125(70-140)
2.3 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 stro	kes		Charge-air pressure kp/cm²
End stop	Full	1780~1850 (1760~1870) 1740 1600 1450 1000 500	0 < 10,0 54,0-57 45,5-49	,0 (53,0- (52,5-	-54,5)	
	Stop	1500	U			
idle stop	Full	380-450 (360-470) 300	0	(8,5-1	16,5)	
End stop	Start	100 120-220	mind.80	,0		·

Angle to the stop-plate	Pre-setting dimensions
Pump a = 25 ± 4° b = 45 ± 8° y = 30 - 8° e 60 + 8°	Pump Dimension IV = 2,0 mm Dimension V = - mm

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WPP 001/4 SAV 5,2a 7

1. Edition

VA 6/100 H 1500 CR 124-4 0 460 306 146

Setting of the pointer at astroke of 0,3 mm in relation to outlet "A".

Pre-stroke setting

 $0,2 \quad mm + 0,02(+0,04)$

supersedes

company:

Saviem

engine:

797-05

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

Charge-air pressure kn/cm³

VDT-WPP 161/4 B

Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ²
1.1 Timing device travel	1100	3,1-3,9	mm		
1.2 Supply pump pressure	1100	5,7-6,2	kp/cm ²		
1.3 Full-load delivery without	1100	63,5-64,5	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	300	7,0-13,0	cm ⁹ /1000 strokes	 	3,0
1.5 Start	100	mind.80,0	cm ³ /1000 strokes		
16 Full-load speed regulation	1650	6,0-14,0	cm ³ /1000 strokes		

2. Test Specification 50 - 800 (1838) 4820 (1838) 880 1100 1350-1500 2.1 Timing device rev/min 1,0-2,4(0,7-2,7) (2,8-4,2) 6,7-7,4(6,4-7,7) Start mm 1100 200 rev/min (5,6-6,3) 6,8-7,3(6,6-7,5)2.2 Supply pump 1,4-1,9(1,2-2,1) kp/cm² 1500 500 55-100(40-110) rev/min Overflow delivery 55-100(40-110) cm³/10 s

3......

23	Fuel	deliveries

estoil-ISO 411

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm
End stop	Full	1680-1780 (1660-1800) 1650 1480 1100 500	0 58,5-61,5 53,0-57,0	(5,0-15,0) (57,5-62,5) (63,0-65,0) (52,0-58,0)	
	Stop	1500	0		
idle stop	Full	400-500 (380-520) 300	0	(6,0-14,0)	
End stop	Start	100 150-250	mind.80,0		

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrüstung.

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Angle to	o the stop-plate	Pre-setting dimensions
Pump		Pump
α	= 25 <u>+</u> 4°	Dimension IV = 3,5 mm
β	= 55 <u>+</u> 8°	Dimension V = 24,6 mm
Υ δ	= 30 - 8°	
U	= 60 + 8°	
ı		

46

WPP 001/4 SAV 5,2a 8

1. Edition

VA 6/100 H 1450 CR 124-6 0 460 306 184

Setting of the pointer at astroke of ...
0.3 mm in relation to outlet "A".

Pre-stroke setting

 $0,2_{mm} + 0,02(+0,04)$

supersedes

company.

Saviem

engine:

797-40

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	1100	3,1-3,9	mm		
1.2 Supply pump pressure	1100	5,7-6,2	kp/cm²		
1.3 Full-load delivery without charge-air pressure	1100	63,5-64,5	cm ³ /1000 strokes		. 2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4 Idle speed regulation	300	7,0-13,0	cm ⁹ /1000 strokes	i	3,0
1.5 Start	100	mind.80,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1600	6,0-14,0	cm ³ /1000 strokes		

2. Test Sp	ecificati	ons Checking values in brackets 650-700 (620-730)	1100	1350-1500	
2.1 Timing device	rev/min mm	Start	(2,8-4,2)	6,7-7,4(6,4-7,7)	
2.2 Supply pump	rev/min	200	1100 (5,5-6,4)	1450 6,7-7,2(6,5-7,4)	
Overflow delivery	rev/min cm ³ /10 s	500 55-100(40-110)	(0,0 0,1)	1450 55-100(40-110)	

23	Fuel	del	WAI	291

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ³
End stop	Full	1650-1750 (1630-1770) 1600 1430 1100 500	0 59,5-62,5 53,0-57,0	(5,0-15,0) (58,5-63,5) (63,0-65,0) (52,0-58,0)	
	Stop	1450	0		
Idle stop	Full	400-500 (380-520) 300	0	(6,0-14,0)	
End stop	Start	100 150-250	mind. 80.0		-

Testoil-ISO 411:

BOSCH

Geschäftsbereich KH. Kundendienst. Kfz-Ausrüstung. < 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH

Angle to the stop-plate	Pre-setting dimensions
Pump $ \alpha = 25 \pm 4^{\circ} $ $ \beta = 55 \pm 8^{\circ} $ $ \delta = 30 - 8^{\circ} $ $ = 60 + 8^{\circ} $	Pump Dimension IV = 3,50 mm Dimension V = 24,65 mm

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WPP 001/4 SAV 5,2 a 1 2. Edition

VA 6/100 H 1450 CR 124 0 460 306 121 supersedes 7.71
Saviem-MAN

Setting of the pointer at astroke of 0,3 mm in relation to outlet "A".

engine: 597

Pre-stroke setting

Testoil-ISO 4113

 $0,2 \quad mm \pm 0,02(\pm 0,04)$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

1. Settings	rev/min	Settings	!	Charge-air press kp/cm ²	Difference in delivery cm ²
1.1 Timing device travel	1100	3,1-3,9	mm .		
1.2 Supply pump pressure	1100	5,7-6,2	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	1100	63,5-64,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	300	6,0-14,0	cm ³ /1000 strokes		3,0
1.5 Start	100	mind.80,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1550	26,0-34,0	cm ³ /1000 strokes		

2. Test Sp	ecificati rev/min	Ons Checking values in brackets 550-800 (620-830)	1100	1350-1500	
-	mm	Start	(2,8-4,2)	7,0-7,7(6,7-8,0)	
000		200	1100	1450	
2.2 Supply pump	rev/min kp/cm²	1,4-1,9(1,2-2,1)	(5,5-6,4)	6,8-7,3(6,6-7,5)	
		500		1450	
Overflow delivery	rev/min cm ³ /10 s	55-100(40-110)		55-100(40-110)	

23	Fuel	deliverse
23	ruei	deliveries

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ³
End stop	Fuli	1620-1730 (1600-1750)	0	/05 0 05 0\	
		1550 1430 1100	59,5-62,5	(25,0-35,0) (58,5-63,5) (63,0-65,0)	
•		500	51,5-55,5	(50,5-57,5)	
	Stop	1450	0		
tdle stop	Full	380-450 (360-470) 300	0	(5,0-15,0)	
End stop	Start	100 150-250	mind.80,0		·

BOSCH

Geschaftsbereich KM. Kundendienst. Kfz-Ausrustung. 1980 by Robert Bosch GmbM. Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbM.

Angle to the stop-plate		Pre-setting dimensions
Pump		Pump
α	= 25 <u>+</u> 4°	Dimension IV = 3,5 mm
β	= 55 ± 8°	Dimension V
Y	= 30 - 8°	
δ	= 60 + 8°	

WPP 001/4 CIT 2,1c 2

Edition

VA 4/90 H 2250 CL 184 0 460 394 030

supersedes

Citroen

company: engine:

CRD 90L

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

0 _{mm}

1. Settings	₹ev/min	Settings	Charge-air press kp/cm ²	Difference in delivery
1.1 Timing device travel	1400	4,3-4,7 mm		
1.2 Supply pump pressure	1400	4,4-4,9 kp/cm²		4.5
1.3 Full-load delivery without	1250	36,0-37,0 cm ³ /1000 stroi	es	1,5
charge-air pressure Full-load delivery with charge-air		cm ³ /1000 strol	NON	2,0
pressure 1.4 Idle speed regulation	350	9,5-15,5 cm ³ /1000 strol	kes	2,0
	100	mind.58,0 cm ³ /1000 stro	kes	
1.5 Start 1.6 Full-load speed regulation	2400	12,0-18,0 cm ¹ /1000 stro	kes	

2.2 Supply pump rick Overflow delivery	cification ev/min ev/min p/cm ² ev/min cm ³ /10 s	Checking values 425-575(395-6 Start 200 1,0-1,5(0,8-1 500 55-100(40-11	05) 1400 (4,0-5,0) 1400 ,7) (4,2-5,	_	2050-2200 3,1)7,0-7,7(6,7-8,0) 2250 7,1-7,6(6,9-7,8) 2250 55-100(40-110)
2.3 Fuel deliveries Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	2500-2600 (2480-2620) 2400 2250 600	0 33,0-35,0 30,0-33,0	(11,0-19,0) (32,0-36,0) (29,0-34,0)	
	Stop	2250	0		
idle stop	Full	360-430 (340-450) 350	0	(8,5-16,5)	
End stop	Start	100 150-250	mind.58,0		·

ingle to the stop-plate	Pre-setting dimensions
Fump $ \begin{array}{rcl} $	Pump Dimension IV = 1,6 mm Dimension V = 24,6 mm

 \pm 0,02(\pm 0,04)

WPP 001/4 CIT 2,1c 1

Edition

VA 4/90 H 2250 CR 183 0 460 394 023

Pre-stroke setting

supersedes

Citroen

company

CRD-90 Export

engine

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

1.	Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1,1	Timing device travel	1400	4,3-4,7	mm		
1.2	Supply pump pressure	1460	4,4-4,9	kp/cm²		
	Full-load delivery without charge-air pressure	1250	36,0-37,0	cm ³ /1000 strokes	3	1,5
	Full-load delivery with charge-air			cm ³ /1000 strokes]	
1.4	pressure Idle speed regulation	350	9,5-15,5	cm ³ /1000 strokes	1	2,0
	Start	100	mind.58,0	cm ³ /1000 strokes		
1.6	Full-load speed regulation	2400	12,0-18,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	ns Checking value 425-575(395-	es in brackets	4400	4000	0050 0000
2.1 Timing device	rev/min mm	Start 0.8-1.8(0.5-	2,1)(4,0-5,0)	1400)5,8-6,8(6,1-	1800 7,1)7,0	
2.2 Supply pump	rev/min kp/cm²	500		1400 4,4-4,9(4,2-5		2250 2250
Overflow delivery	rev/min cm ³ /10 s	55-100(40-			55-	100(40-110)
2.3 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air	pressure kp/cm²
End stop	Fuli	2500-2600 (2480-2620) 2400 2250 1250 600	0 33,0-35,0 30,0-33,0	(11,0-19,0 (32,0-36,0) (35,5-37,5) (29,0-34.0)		
	Stop	1150	0			
tdle stop	Full	360-430 (340-450) 350	0	(8,5-16,5)		
End stop	Start	100 150-250	mind.58,0			

Angle to the stop-plate		Pre-setting dimensions
Pump		Pump
α	= 25 ± 4°	Dimension IV = 1,6 mm
ß	= 55 <u>+</u> 8°	Dimension V = 24,6 mm
γ δ	= 30 - 8°	
•	= 60 + 8°	

WPP 001/4 HAN 2,3b 4

Edition

VA 3/100 H 1300 CR 52-1 0 460 303 099

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

supersedes Hanomag company D 132-35 PS engine:

Pre-stroke setting

0,3 _{mm}

2. Test Specifications

rev/min

mm

2.1 Timing device

± 0,04

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers **Test Intructions and Test Equipment**

VDT-WPP 161/4 B

Pre-setting see reverse side

980-1120

2.4-3.1(2.1-3.4)

1.	Settings	rev/min	Settings		Charge-air press	Difference in delivery cm ²
1.1	Timing device travel	900	1,2-2,2	mm		
12	Supply pump pressure	900	4,5-5,0	kp/cm ²		
	Full-load delivery without charge-air pressure	800	59,0-60,0	cm ³ /1000 strokes		
	Full-load delivery with charge-air	-		cm ³ /1000 strokes		
	pressure Idle speed regulation	300	10,0-16,0	cm ³ /1000 strokes		
15	Start	100	mind.65,0	cm ³ /1000 strokes		
1.6	Full-load speed regulation	1350	28,0-36,0	cm ⁹ /1000 strokes		

900

(0.9-2.5)

Checking values in brackets

630-780(600-810)

		Start		(0,5-2,5)	_	,==0,1(2,1=0,=)
2.2 Supply pump	rev/min	- 100	,	900		1300
	kp/cm²	0,8-1,3(0,6	-1,5)	(4,3-5,2)	5	,9-6,4(5,7-6,6)
Overflow delivery	rev/min	800.				1300
	cm ³ /10 s	55-100(40-	110)			55-100(40-110)
2.3 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 stroke	s		Charge-air pressure kp/cm²
End stop	Full	1400-1460 (1380-1480)	0			
		1350 1250	54,5-57,5	(27,0-37 5 (53,5-58 (58,5-60	,0) ,5)	
		800 500	54,5-58,5	(58,5-60 (53,5-59	,5) ,5)	
	Stop	1300	0			
ldle stop	Full	380-480	0			
		(360-500) 300		(9,0-17,	0)	
	Start	100	 mind.65,0)		}

Festoil-ISO 4113

End stop

mind.150

Angle to the stop-plate	Pre-setting dimensions	
Pump a = 25 ± 4° b = 40 ± 8° v = 30 - 8° = 60 + 8°	Pump Dimension IV = MM Dimension V = 24,65mm	

46

WPP 001/4 HAN 2,3 d 4

1. Edition

En

VA 3/100 H 1300 CR 52-3 0 460 303 101

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

Pre-stroke setting

0,3 _{mm}

+ 0,02

supersedes Hanomag
company D 132-40 PS
engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	900	1,6-2,4	mm		
1.2 Supply pump pressure	900	3,9-4,4	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	1100	49,0-50,0	cm ³ /1000 strokes		
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	300	10,0-16,0	cm ³ /1000 strokes		
1.5 Start	100	mind.65,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1350	28,0-36,0	cm ⁹ /1000 strokes		

2. Test Sp	ecificati	Ons . Checking values in brackets	900	1030-1160
2.1 Timing device	rev/min mm	650-790(620-820) Start	(1,3-2,7)	3,4-4,1(3,1-4,4)
		⁻ · 100	900	1300
2.2 Supply pump	rev/min kp/cm²	0,8-1,3(0,6-1,5) 500	(3,7-4,6)	5,2-5,7(5,0-5,9) 1300
Overflow delivery	rev/min cm ³ /10 s	55-100(40-110)		55-100(40-110)

23	Fuel	deliveries

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop		1250 1100	0 48,0-51,0 44,0-48,0	(27,0-37,0) (47,0-52,0) (48,5-50,5) (43,0-49,0)	
	Stop	1300	- 0		
Idle stop	Full Start	380-430 (360-450) 300 100 mind.150	0 mind.65,0	(9,0-17,0)	

Angle to the stop-plate	Pre-setting dimensions
Pump α = 25 ± 4° β = 40 ± 8° γ = 30 - 8° δ = 60 + 8°	Pump Dimension IV = 5,5 mm Dimension V = mm

WPP 001/4 HAN 2,3 c 1

supersedes

Edition

VA 3/100 H 1500 BR 129-5 0 460 303 089

Hanomag company. D 131 W engine.

Setting of the pointer at a stroke of 1,12 mm in relation to outlet "A".

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers

Pre-stroke setting

VDT-WPP 161/4 B

Test Intructions and Test Equipment

Pre-setting see reverse side

0,3 mm

1.	Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ²
1.1	Timing device travel	1000	6,0-7,0	mm		
1.2	Supply pump pressure	1000	4,7-5,2	kp/cm ²		
1.3	Full-load delivery without charge-air pressure	1200	50,5-51,5	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4	Idle speed regulation	300	11,0-17,0	cm ⁹ /1000 strokes		3,0
15	Start	100	mind.60,0	cin ³ /1000 strokes		
1.6	Full-load speed regulation	1560	15,0-23,0	cm ³ /1000 strokes		

En

2. Test Sp	ecificati	ONS Checking values in brackets			
2.1 Timing device	rev/min	510-640(480-670)	1000	1260-1400	İ
	mm	Start	(5,7-7,3)	9,7-10,4(9,4-10,7)	
2.2 Supply pump	rev/min	100	1000	1500	į
	kp/cm²	0,7-1,2(0,5-1,4)	(4,5-5,4)	6,1-6,6(5,9-6,8)	ŧ
Overflow delivery	rev/min	500		1500	
-	cm ³ /10 s	mind.25		55-125(40-140)	
2.3 Fuel deliveries					

2.3 Fuel deliveries	
Connect constraint lower	l Delivery tower

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	Charge-air pressure kp/cm ³
End stop	Full	1580-1630 (1560-1650) 1560	0 (14.0	24.0)
		1450	(14,0- 49,0-52,0 (48,0- (50,0- 44,0-47,0 (43,0-	53,0)
		600	44,0-47,0 (43,0-	48,0)
	Stop	1500	0	
Idle stop	Full	380-440 (360-460) 300	0 (10,0-	18,0)
End stop	Start	100 300-550	mind.60,0	·

Angle to the stop plate	Pre-setting dimensions	
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 45 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $= 60 + 8^{\circ}$	Pump Dimension IV = - MM Dimension V = - MM	

WPP 001/4 HAN 2,3a 1

1. Edition

1000

VA 3/100 H 1300 BR 129-1 0 460 303 081

Setting of the pointer at a stroke of 1,12 mm in relation to outlet "A".

2. Test Specifications

Pre-stroke setting

2.1 Timing device

0,3 mm

supersedes

company-

Hanomag

engine:

D 132

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment VDT-WPP 161/4 B

1050-1200

Pre-setting see reverse side

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1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	1000	4,5-5,5	mm	,	
1.2 Supply pump pressure	1000	5,0-5,5	kp/cm²		
1.3 Full-load delivery without charge-air pressure	800	57,5-58,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-a pressure	ir		cm ³ /1000 strokes		<u> </u>
1.4 Idle speed regulation	300	10,0-16,0	cm ³ /1000 strokes	[]	3,0
1.5 Start	100	mind.60,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1350	28,0-36,0	cm ³ /1000 strokes		

Checking values in brackets

550-700(520-730)

	mm	Start		(4,2-5,8)	5,7-6,4(5,4-6,7)	
2.2 Supply pump	rev/min	100	.4 -73	1000	1300	
Overflow delivery	rev/min	_{/min} 500		(4,8-5,7) 5,9-6,4(5,7-6,6) 1300 55-125(40-140)		
2.3 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²	
End stop	Full	1390-1440 (1370-1460) 1350 1250 800 500	0 53,5-56,5 50,5-54,0	(27,0-37,0) (52,5-57,5) (57,0-59,0) (49,5-55,0)		
	Stop	1300	0			
Idle stop	Full	340-390 (320-410) 300	0	(9,0-17,0)		
End stop	Start	100 300-550	mind. 60,0		-	

Angle to the stop-plate	Pre-setting dimensions
Pump $a = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = - mm Dimension V = - mm Dimension I = 7,0mm Dimension II = 6,5mm Dimension III = 27,8mm

WPP 001/4 DEE 2,5e 1

1. Edition

VA 3/100 H 1050 BR 28-1

company. engine:

supersedes

Plunger lift 1.72 mm referenced to outlet "A" in line with engine TDC position.

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers

493 B

John Deere

Test Intructions and Test Equipment VDT-WPP 161/4 B

0,3 Pre-stroke setting

Testoil-ISO 4113

			Pr	e-setting see revers	ie side
1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	600	6,9-7,9	mm		
1.2 Supply pump pressure	600	5,1-5,6	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	1000	48,5-49,5	cm ³ /1000 strokes	ļ	2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	400	9,0-15,0	cm ³ /1000 strokes		3,0
1.5 Start			cm ³ /1000 strokes		
1.6 Full-load speed regulation	1110	26,0-34,0	cm ³ /1000 strokes	,	

En

2. Test Sp 2.1 Timing device	rev/min	Checking yallyes in bracket 100-260 (70-290) Start	s 600 (6,6-8,2)	790-940 9,7-10,4(9,4-10,7)
2.2 Supply pump	rev/min kp/cm²	100 1,7-2,2(1,5-2,4) 500	600 (4,9-5,8) 1050	1000 6,2-6,7(6,0-6,9)
Overflow delivery	rev/min cm ³ /10 s		55-125(40-1	40

2.3	Fuel	deliv	eries

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²
End stop .	Full	1170-1260 (1150-1280) 1210 1110 1000 500 100	0 max. 3,0 41,5-45,5 mind.32,5	(25,0-35,0) (48,0-50,0) (40,5-46,5)	
	Stop	1050	0	-	
Idle stop	Fuli	470-530 (450-550) 400	0	(8,0-16,0)	
End stop	Start				

gle to the stop-plate	Pre-setting dimensions
mp = 25 ± 4° = 30 ± 8°	Pump Dimension IV = 3,0 mm Dimension V = - mm
= 30 + 8° = 30 - 8°	Dimension V = - mm Dimension I = 7,0 mm Dimension II = 10,5 mm
= 60 + 8°	Dimension III = 26,8 mm

46

WPP 001/4 HAN 3,1 a 2

1. Edition

VA 4/100 H 1700 BR 118-4 0 460 304 107

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

supersedes company D 122 LS engine.

Pre-stroke setting 0 1 mr

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

1.	Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1	Timing device travel	1100	6,4-7,4	mm .		
1.2	Supply pump pressure	1100	5,4-5,9	kp/cm²		
1.3	Full-load delivery without charge-air pressure	1000	53,5-54,5	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air		*-	cm ³ /1000 strokes		
1.4	pressure idle speed regulation	350	10,0-16,0	cm ² /1039 strokes		3,0
1.5	Start	100	mind.65,0	cm ³ /1000 strokes		
1.6	Full-load speed regulation	1810	22,0-28,0	cm ³ /1000 strokes		

2. Test Specifications Checking values in brackets (600-750 (570-780) 1100 1350-1500 rev/min 2.1 Timing device (6,1-7,7)10,7-11,4(10,4-11,7) Start mm 1100 1700 ⁻· 100 rev/min 2.2 Supply pump 7,3-7,8(7,1-8,0) 0,5-1,0(0,3-1,2) (5,2-6,1)kp/cm² 1500 rev/min Overflow delivery 85-155(70-170) cm³/10 s

2.3	Fuel	deliver	ies
-----	------	---------	-----

1870-1970 (1850-1940) 1810 (21,0-29,0) 1810 (53,0-55,0) (5	Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
Idle stop Full 480-540 0 (2,0-8,0) 450 350 (9,0-17,0) Start 100 mind.65,0	Ena stop	b sati	(1850-1940) 1810 1680 1000	54,5-57,5	(53,5-58,5)	
(460-560) 450 350 (2,0-8,0) (9,0-17,0) Start 100 mind.65,0		Stop	1700	0	·	
	Idle stop	Full	(460-560) 450	0	(2,0-8,0) (9,0-17,0)	
	End stop	Start	1	mind.65,0		

Angle to	the stop-plate	Pre-setting dimensions
Pump α	05 40	Pump
	= 25 <u>+</u> 4°	Dimension IV = - MM
ß	= 55 <u>+</u> 8°	Dimension V = - MM
ν δ	= 45 - 8°	
	$= 60 + 8^{\circ}$	

WPP 001/4 SAV 5,2 a 4

1. Edition

VA 6/100 H 1300 BR 124-1 0 460 306 067

supersedes

company.

Renault (Saviem)

engine:

597-01

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

0,2 _{mm}

2. Test Specifications Checking values in brackets

Plunger lift 0.3 mm at 23° BTDC

1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	1000	7,3-8,3	mm .		
1.2 Supply pump pressure	1000	5,6-6,1	kp/cm ²		
1.3 Full-load delivery without	1000	56,0-57,0	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		į
pressure 1.4 Idle speed regulation	250	12,0-18,0	cm ³ /1000 strokes		3,0
1 5 Start	100	mind.70,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1350	41,0-49,0	cm ⁹ /1000 strokes		

2.1 Timing device	rev/min	400-560(370-	590) ·	1000	1120-1250
	mm	Start	(7	,0-8,6)	9,7-10,4(9,4-10,7)
2.2 Supply pump	rev/min	100		1000	1300
	kp/cm²	0,9-1,4(0,	7-1,6) (5	,4-6,3)	6,5-7,0(6,3-7,2)
Overflow delivery	rev/min	500		1000	1300
	cm ³ /10 s	mind.25	55	-125(40-140)	55-125(40-140)
2.3 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	s	Charge-air pressure kp/cm²
End stop	Full	1430-1480 (1410-1500) 1450 1350 1300 1000 500	[(40,0-50,0) (56,5-61,5) (55,5-57,5) (46,5-52,0)	
idle stop	Full	300-350 (280-370) 250 100	0 mind.70,0	(11,0-19,0)	
End stop	Start	110-210			·

Angle to the stop-plate	Pre-setting dimensions
Pump	Pump
a = 25 <u>+</u> 4°	Dimension IV= 5,0 mm
$^{\beta}$ = 55 ± 8°	Dimension V= - MM
° = 30 - 8°	I = 7,0 mm
δ = 60 + 8°	Dimension 1 - 7,0 mm Dimension II = 10,5 mm
	Dimension $III = 35,3 \text{ mm}$

WPP 001/4 SAV 5,2a 5

1. Edition

VA 6/100 H 1500 BR 124-4 0 460 306 150

Setting of the pointer at astroke of 0,3 mm in relation to outlet "A".

Pre-stroke setting

0,2 _{mm}

supersedes

company

Saviem D 797.05

engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge-air press &p/cm ²	Difference in delivery cm ³
1.1 Timing device travel	1000	6,5-7,5	mm		
1 2 Supply pump pressure	1000	5,9-6,4	kp/cm ²		
1.3 Full-load delivery without	1000	58,5-59,5	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	300	7,0-13,0	cm ² /1000 strokes		3,0
1.5 Start	100	mind.75,0	cm ³ /1000 strokes		
1 6 Full-toad speed regulation	1610	26,0-34,0	cm ⁹ /1000 strokes		

2. Test Sp	ecificati	ONS Checking values in brackets	4000	4050 4440
2.1 Timing device	rev/min	420-570(390-600) Start	1000	1350-1440 12,7-13,4(12,4-13,7)
	mm	100	(6,2-7,8) 1000	1500
22 Supply pump	rev/min kp/cm²	0,9-1,4(0,7-1,6)	(5,7-6,6)	7,5-8,0(7,3-8,2)
Overflow delivery	rev/min cm ³ /10 s	500 mind.25		1500 55-155(40-170)

Speed control lever	Delivery lever	cev/min	cm ³ /1000 strokes	Charge-air pressure kp/cm ³
End stop	Full	1630-1700 (1610-1720) 1650 1610 1500 1000 500	58,0-61,0 (57	3,0-60,0)
·	Stop	1500	0	
Idle stop	Full	390-450 (370-470) 300		,0-14,0)
End stop	Start	100 110-210	mind.75,0	·

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz. Ausrustung.
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Angle to the stop-plate	Pre-setting dimensions
Pump a = 25 ± 4° β = 55 ± 8° y = 30 - 8° = 60 + 8°	Pump Dimension IV = - MM Dimension V = - MM

WPP 001/4 SAV 3,0a 2 1. Edition

800

VA 4/100 H 1600 BR 127 0 460 304 056

** See 3,0a 1

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

Pre-stroke setting

2. Test Specifications

2.1 Timing device | rev/min

supersedes

company:

Saviem

engine:

599

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers

Test Intructions and Test Equipment

1400-1560

VDT-WPP 161/4 B

Pre-setting see reverse side

1.	Settings	rev/min	Settings		Charge-air press	Difference in delivery
		<u> </u>			kp/cm ²	cm²
1.1	Timing device travel	800	4,8-5,8	mm .		
1.2	Supply pump pressure	800	4,2-4,7	kp/cm²		
1.3	Full-load delivery without charge-air pressure	1000	49,5-50,5	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4	Idle speed regulation	320	13,0-19,0	cm ³ /1000 strokes	Ì	3,0
1.5	Start	100	mind.76,0	cm ³ /1000 strokes		ļ
1.6	Full-load speed regulation	1670	27,0-33,0	cm ¹ /1000 strokes		

Checking values in brackets 350-500 (320-530)

2.1 Himing device	Leavun	Ctant	(4 5-6 1)	13,7-14,4(13,4-14,7)
2.2 Supply pump	rev/min kp/cm²	100 0,8-1,3(0,6	800 -1,5) (4,0-4,9)	1500 6,8-7,3(6,6-7,5)
Overflow delivery	rev/min cm ³ /10 s	500 mind.25	1500 55-155(40-17	1600 0) 55-155(40-170)
2.3 Fuel deliveries				
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	Charge-air pressure kp/cm²
End stop	Full	1730-1780 (1710-1800) 1670 1600 1000 500	0 (26,0-34,0) 43,5 <u>46,5 (42,5-47,5)</u> (49,0-51,0) 42,5-46,5 (41,5-47,5) 29,75-36,25(28,75-37,2	Total Control
	Stop	1600	0	
Idle stop	Full	390-440 (370-460) 315-325	0 (12,0 - 20,0)	·
End stop	Start	100 110-210	mind.76,0	

Angle to the stop-plate	Pre-setting dimensions		
Pump $ \alpha = 25 \pm 4^{\circ} $ $ \beta = 45 \pm 8^{\circ} $ $ \gamma = 30 - 8^{\circ} $ $ = 60 + 8^{\circ} $	Pump Dimension IV = - mm Dimension V = - mm		

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WPP 001/4 HAN 2,3a

2. Edition

engine:

VA 3/100 H 1300 BR 129 0 460 303 080 supersedes company:

Setting of the pointer at a stroke of 1,12 mm in relation to outlet "A".

D 131

1.68

Hanomag

Pre-stroke setting

 0.3_{mm}

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

1. Settings	rev/min	Sattings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	1100	3,3-4,3	mm		
1.2 Supply pump pressure	1100	5,0-5,5	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	1000	51,0-52,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air			cm ³ /1000 strokes	•	
pressure 1.4 Idle speed regulation	300	11,0-17,0	cm ³ /1000 strokes		3,0
1.5 Start	100	mind.70,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1380	25,0-33,0	cm ³ /1000 strokes		

2. Test Specifications Checking values in brackets 750-850 (720-880) 1100-1200 1100 2.1 Timing device rev/min 3,7-4,4 (3,4-4,7)(3,0-4,6)mm Start 1100 1300 100 2.2 Supply pump rev/min kp/cm² 0,6-1,1(0,4-1,3)(4,8-5,7)5,6-6,1(5,4-6,3) 500 1000 1300 Overflow delivery rev/min cm³/10 s mind.25 55-125(40-140) 55-125(40-140)

2.3	Fuel	de	liver	ies

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	Charge-air pressure kp/cm ²
End stop	Full	1430-1480 (1410-1500) 1380 1300 1000 600	50,5-53,5 (49,5	-52,5)
	Stop	1300	0	
idle stop	Full	420-480 (400-500) 300	0 (10,0	-18,0)
End stop	Start	100 300-550	mind.70,0	

•

61

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 + 4^{\circ}$ $\beta = 40 + 8^{\circ}$ $Y = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = - mm Dimension V = - mm Dimension = 7,0 mm Dimension = 4,5 mm Dimension = 25,8 mm

WPP 001/4 HAN 3,1 f

Edition

VA 4/100 H 1000 BR 56

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

6.70 supersedes Hanomag company: D 142

engine

Pre-stroke setting

0,1

2. Test Specifications

rev/min

2.1 Timing device

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers **Test Intructions and Test Equipment**

VDT-WPP 161/4 B

850-950

Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	800	2,3-3,3	mm		
1.2 Supply pump pressure	800	4,5-5,0	kp/cm ²		
1.3 Full-load delivery without	800	54,5-55,5	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1 4 Idle speed regulation	300	11,0-17,0	cm ³ /1000 strokes		3,0
1.5 Start (mech.)	100	mind.75,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1050	49,0-57,0	cm ³ /1000 strokes		

800 .

Checking values in brackets 530-650 (500-680)

•	mm	Start	(2,0-3,6)	3,7-4,4(3,4-4,7)
2.2 Supply pump	rev/min kp/cm²	100 1,1-1,6(0,9-	800 -1,8) (4,3-5,2)	1000 5,1-5,6(4,9-5,8)
Overflow delivery	rev/min cm ³ /10 s	500 mind.25	1000 55-125(40-140	0)
2.3 Fuel deliveries				
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	Charge-air pressure kp/cm²
End stop	Full	1120-1170 (1100-1190) 1050 980 800 500	(48,0-58, 52,5-55,5 (51,5-56, (54,0-56, 51,5-54,5 (50,5-55, 51,5-54,5 (50,5-55, 51,5-54,5 (50,5-55, 51,5-54,5 (50,5-55, 51,5-54,5 (50,5-55, 51,5-54,5 (50,5-55, 51,5-54,5 (50,5-55, 51,5-54,5 (50,5-55, 51,5-54,5 (50,5-55, 51,5-54,5 (50,5-55, 51,5-54,5 (50,5-55, 51,5-54,5 (50,5-55, 51,5-54,5 (50,5-55, 51,5-54,5 (50,5-55, 51,5-54,5 (50,5-55, 51,5-54,5 (50,5-55, 51,5-54,5 (50,5-55, 51,5-54,5 (50,5-55, 51,5-54,5 (50,5-55,54,5 (50,5-55,54,5 (50,5-55,54,5 (50,5-55,54,5 (50,5-55,54,5 (50,5-55,54,5 (50,5-55,54,5 (50,5-55,54,5 (50,5-55,54,5 (50,5-55,54,5 (50,5-55,54,5 (50,5-55,54,5 (50,5-55,54,5 (50,5-55,54,5 (50,5-55,54,5 (50,5-55,54,5 (50,5-55,54,5 (50,5-55,54,54,5 (50,5-55,54,54,5 (50,5-55,54,54,54,54,54,54,54,54,54,54,54,54,5	,0) ,5) ,0) ,5)
	Stop	1000	0	
ldle stop	Full	370-450 (350-470) 300	0 (10,0-18,	,0)
End stop	Start	100 mind.150	mind. 750	

Angle to the stop-plate	Pre-setting dimensions		
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 5,5 mm Dimension V = - mm		

WPP 001/4 HAN 3.1 c Edition

VA 4/100 H 1150 BR 55

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

4.69 supersedes Hanomag company: D 142 K engine:

Pre-stroke setting

_{mm} 1ر0

2. Test Specifications

2.1 Timing device rev/min

All test specifications are valid for Bosch Fuel Injection Pump Test Benches Test Intructions and Test Equipment **VDT-WPP 161/4 B**

1020-1120

Pre-setting see reverse side

1.	Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1	Timing device travel	1000	4,0-5,0	mm		
1.2	Supply pump pressure	1000	5,0-5,5	kp/cm ²		
1.3	Full-load delivery without	800	50,5-51,5	cm ³ /1000 strokes		2,5
	charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
14	pressure idle speed regulation	300	9,5-15,5	cm ⁹ /1000 atrokes		3,0
	Start (autom.)	100	mind.75,0	cm ³ /1000 strokes		
	Full-load speed regulation	1200	33,0-41,0	cm ⁹ /1000 strokes		

1000

Checking values in brackets

600-750(570-780)

	mm	Start		(3,7-5,3)	4,7-5,4(4,4-5,7)
2.2 Supply pump	rev/min	100 1,0-1,5(0,8-	.1 7)	1000 (4.8-5.7)	1150 5,5-6,0(5,3-6,2)
Overflow delivery	rev/min cm ³ /10 s	500 mind.25		1000 5-125(40-140)	3,3-0,0(3,3-0,2)
2.3 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1230-1280 (1210-1300) 1200 1130 800 500		(32,0-42,0) (46,5-51,5) (50,0-52,0) (48,0-53,0)	
	Stop	1150	0		
Idle stop	Full	360-420 (340-440) 300	0	(8,5-16,5)	
End stop	Start	100 500	mind.75,0 max. 45,0		

Angle to the stop-plate	Pre-setting dimensions
Pump a = 25 ± 4° B = 40 ± 8° v = 30 - 8° δ = 60 ± 8°	Pump Dimension IV = 7,0 mm Dimension V = - mm

46

WPP 001/4 IHC 5,1 e 2. Edition

VA 6/100 H 1400 BR 57

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

supersedes 6.69 I H C pagine: D 310

Pre-stroke setting

0.4 mm

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Erroment

VDT-WPP 161/4 B

Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delive: y cm ³
1.1 Timing device travel	800	5,8-6,8	mm		
1.2 Supply pump pressure	800	4,9-5,4	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	1250	63,5-64,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strakes		1
1.4 Idle speed regulation	400	9,0-15,0	cm ³ /1000 strokes		3,0
15 Start (mech.) 196bar	100	mind.85,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1500	27,0-35,0	cm ³ /1000 strokes		

2. Test Specifications Checking values in brackets 2.1 Timing device rev/min 380-530(350-560) 800 1130-1280 Start (5.5-7.1)11,7-12,4(11,4-12,7) - 100 800 2.2 Supply pump rev/min 1400 kp/cm² 1,0-1,5(0,8-1,7)(4,7-5,6)6,9-7,4(6,7-7,6) 500 1000 Overflow delivery rev/min cm³/10 s mind.25 55-125(40-140) 2.3 Fuel deliveries cm3/1000 strokes Speed control lever Delivery lever rev/min Charge-air pressure kp/cm² End stop Full 1570-1800 0 (1550 - 1820)1590 < 5,0 1500 (26,0-36,0)1400 61,0-64,0 (60,0-65,0) 1250 (63,0-65,0)500 57,0-60,0 (56,0-61,0) 1400 0 Stop 500-560 0 idle stop (480-580)400 (8,0-16,0)100 mind.85,0 Start 500 mind.30,0-57,0

estoil-ISO 4113

End stop

mind.180

6.1

Angle to the stop-plate	Pre-setting dimensions		
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 50 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 2,5 mm (s.a.BMP 161/32) Dimension V = - mm		

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WPP 001/4 PER 5,8 L

1. Edition

VA 6/100 H 1400 BL 1 0 460 306 046

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

Pre-stroke setting

0,3 _{mm}

2. Test Specifications

2.1 Timing device rev/min

supersedes
Company: Miko-Perkins
6/354
engine:

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

1300-1500

Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	750	3,0-3,8	mm		
1.2 Supply pump pressure	700	4,3-4,8	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	700	55,0-56,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	250	8,0-14,0	cm ⁹ /1000 strokes		3,0
1.5 Start	100	mind.85,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1400	43,5-51,5	cm ³ /1000 strokes		

750

Checking values in brackets

1550-630(520-660)

		1	=		
2.2 Supply pump	mm rev/min	Start 100		700	13,7-14,4(13,4-14,7) 1400
Overflow delivery	kp/cm² rev/min cm³/10 s	2,1-2,7(1,7-2 500 mind.25	2,9)	(4,1-4,0)	7,0-7,5(6,8-7,7) 1400 55-100(40-110)
2.3 Fuel deliveries		4			
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1560-1630 (1540-1650) 1400 1400 700 500	İ	(42,5-52,5) (56,5-61,5) (54,5-56,5) (50,5-56,5)	
	Stop	1400	0		
idle stop	Full	280-330 (260-350) 250	0	(7,0-15,0)	
End stop	Start	100 500 mind.190	mind.85 max. 45		

Festoil-ISO 4113

8.81

	Pre-setting dimensions		
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 63 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = - mm Dimension V		

WPP 001/4 HAN 3,1 a

Edition

VA 4/100 H 1700 BR 118 BR 118-2

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

c. 3 supersedes Hanomag company D 141 L engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

0,1 _{mm}

Pre-stroke setting

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1 1 Timing device travel	1300	5,5-6,5	mm .		
1.2 Supply pump pressure	1300	6,0-6,5	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	1000	47,5-48,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		1
1 4 Idle speed regulation	350	10,0-16,0	cm ³ /1000 strokes		3,0
15 Start (autom.)	100	mind.65,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation			cm ³ /1000 strokes		

2. Test Sp						
2.1 Timing device	rev/min	750-910(720-		1300		1450-1600
	mm	Start	(5,2-6,8)	8,	7-9,4(8,4-9,7)
2.2 Supply pump	rev/min	⁻ 100		1300		1700
	kp/cm²	0,5-1,0(0,3-	1,2) (5,8-6,7)	7,	1-7,6(6,9-7,8)
Overflow delivery	rev/min	500		1500		
	cm ³ /10 s	mind.25	8	5-155(70-17	70)	
2.3 Fuel deliveries	<u> </u>					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 stroke:	S	l	Charge-air pressure kp/cm²
End stop	Full	1890-1960 (1870-1980) 1800 1700 1300 1000 500	49,5-51,5	(25,0-35,0 5 (43,5-48,5 6 (48,5-52,5 (47,0-49,0 6 (42,5-47,5	5) 5) 0)	
	Stop	1700	0	_		
Idle stop	Full	480-540 (460-560) 350	0	(9,0-17,0))	
End stop	Start	100 300-550	mind.65,0)		
	l		<u> </u>			

Angle to the stop-plate	Pre-setting dimensions	
Pump a = 25 ± 4° b = 55 ± 8° c = 45 - 8° c = 60 + 8°	Pump Dimension IV= 2,5 mm Dimension V= - mm Dimension I = 7,0 mm Dimension II = 9,0 mm Dimension III = 30,3 mm	

66

WPP 001/4 SAV 5,2 a

3. Edition

VA 6/100 H 1450 BR 124 0 460 306 048

supersedes

7.71

company

Saviem

engine.

597.02

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches**

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting	0,2 _{mm}		
Plunger lift	0.3 mm at	23°	BTDC

2. Test Specifications

1. Settin	gs	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1 Timing device	e travel	1000	6,7-7,7	mm		
1.2 Supply pump	p pressure	1000	5,9-6,4	kp/cm²		
1.3 Full-toad del charge-air pi		1000	60,0-61,0	cm ³ /1000 strokes		2,5
Full-load del	ivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed re	egulation	250	21,0-27,0	cm ³ /1000 strokes		3,0
1.5 Start		100	mind.75,0	cm ³ /1000 strokes		
1.6 Full-load spe	eed regulation	1560	26,0-34,0	cm ³ /1000 strokes		

Checking values in brackets

2.1 Timing device	rev/min	420-570(390-	-600) .	1000	1350-1440
	mm .	Start	ı	(6,4-8,0)	12,7-13,4(12,4-13,7)
2.2 Supply pump	rev/min	100		1000	1450
	kp/cm²	0,9-1,4(0,7-	-1,6)	(5,7-6,6)	7,5-8,0(7,3-8,2)
Overflow delivery	rev/min	500			1450
	cm ³ /10 s	mind.25			85-155(70-170)
23 Fuel deliveries	<u> </u>				
Speed control lever	Delivery lever	rev/min	cm ³ /1000 stroke	!S	Charge-air pressure kp/cm²
End stop	Full	1600-1800 (1580-1820) 1650 1560 1450 1000 500	52,5-56,0	(25,0-35,0) (52,0-57,0 (59,5-61,5) (51,5-57,0) }
	Stop	1450	0		
Idle stop	Full	340-390	0		
		(320-410) 300 250	max.9,0	(20,0-28,0)
End stop	Start	100 110-210	mind.75,0)	

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Angle to the stop-plate	Pre-setting dimensions
$^{\circ}$ = 60 + 8° Dim	Pump Dimension IV = 5,0 mm Dimension V = - mm Pension I = 7,0 mm Dension II = 12,0 mm Dension II = 35,3 mm

WPP 001/4 HAN 3,1a 1

supersedes

Edition

VA 4/100 H 1700 BR 118-1 BR 118-3

Pre-stroke setting

Hanomag company: D 142 L engine:

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers

1350-1500)

1700

Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

0,1

				e.zemili zee ieverz	
1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ²
1.1 Timing device travel	1100	6,4-7,4	nim		
1.2 Supply pump pressure	1100	5,4-5,9	kp/cm²		
1.3 Full-load delivery without charge-air pressure	1000	55,0-56,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	350	10,0-16,0	cm ² /1000 strokes	<u> </u>	3,0
1.5 Start	100	mind,65,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1810	22,0-28,0	cm ³ /1000 strokes		

2. Test Specifications Checking values in brackets 600-750(570-780) 1100 2.1 Timing device rev/min (6,1-7,7)10,7-11,4(10,4-11,7) Start -. 100 1100 2.2 Supply pump rev/min 0,5-1,0(0,3-1,2)(5,2-6,1)7,3-7,8(7,1-8,0) kp/cm² 1500 Overflow delivery rev/min 85-155(70-170) cm³/10 s

2.3 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1870-1920 (1850-1940) 1810 1680 1000 500	55,0-58,0	(21,0-29,0) (54,0-59,0) (54,5-56,5) (52,5-57,5)	
	Stop	1700	0		
Idle stop	Full	480-540 (460-560) 450	0	(2,0-8,0)	
End stop	Start	100 300-550	mind.65,0		·

Angle to the stop-plate	Pre-setting dimensions
	Pump Dimension IV = 0,5 mm (s.a.BMP 161/32) $I = 7,0 \text{ mm}$ $I = 7,0 \text{ mm}$ rsion II = 11,0 mm rsion III = 32,3 mm

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WPP 001/4 HAN 3,1d 3

. Edition

VA 4/100 H 1200 BR 58

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

supersedes company

Hanomag D 142

engine:

All test specifications are valid for

Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

0,1 mm

1. Settings	rev/min	Settings		Charge-air press	Difference in delivery cm ³
1.1 Timing device travel	900	3,2-4,2	mm	` ` ` ` ` `	
1.2 Supply pump pressure	900	5,1-5,6	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	800	57,0-58,0	cm ³ /1000 strokes	·	2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	300	20,0-26,0	cm ⁹ /1000 strokes	<u> </u>	3,0
1.5 Start (mech.)	100	mind.85,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1250	33,0-41,0	cm ⁹ /1000 strokes		

2. Test Sp	ecificat	One Checking values in brackets		
2.1 Timing device	rev/min	600-730(570-760)	900	950-1050
	mm	Start	(2,9-4,5)	4,7-5,4(4,4-5,7)
2.2 Supply pump	rev/min	- 100	900	1200
	kp/cm²	0,9-1,4(0,7-1,6)	(4,9-5,8)	6,2-6,7(6,0-6,9)
Overflow delivery	rev/min	500	1000	
Overnow denvery	cm ³ /10 s	mind.25	25-55(40-1	40)

2.3	Fuel	deliv	eries

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	Charge-air pressure kp/cm²
End stop	Full	1290-1340 (1270-1360) 1250 1180 800 500	0 (32,0-42,0) 52,5-55,5 (51,5-56,5) (56,5-58,5) 57,0-60,0 (56,0-61,0)	
	Step	1200	0	
idie stop	Full	400-460 (380-480) 300 100	0 (19,0-27,0) mind. 85,0	*
End stop	Start	100	III	•

Testoil-ISO 4113

BOSCH

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 1,5 mm(s.a.BMP) Dimension V = - mm

WPP 001/4 GUL 2,3b 2 Edition

VA 3/100 H 1050 BR 111-1

0 460 303 074

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

Pre-stroke setting

0.1mm

supersedes

Guldner company:

3 L 76 engine:

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches**

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

1. Set	tings	rev/min	Settings		Charge-air press. kp/cm²	Difference in delivery cm ²
1.1 Timing d	levice travel	700	4,9-5,9	mm		
1.2 Supply p	oump pressure	700	4,4-4,9	kp/cm ²		
	delivery without air pressure	700	46,5-47,5	cm ³ /1000 strokes		2,5
Full-load	delivery with charge-air			cm ³ /1000 strakes		المناسع.
pressure 1.4 Idle spec	ed regulation	250	22,0-28,0	cm ⁹ /1000 strokes		3,0
1.5 Start		100	mind.110,0	cm ³ /1000 strokes		
1.6 Full-load	speed regulation	1100	16,0-24,0	cm ³ /1000 strakes		

2. Test Specifications Checking values in brackets 350-500(320-530) 700 850-1000 2.1 Timing device rev/min (4,6-6,2)Start 8,7-9,4(8,4-9,7) 100 700 1000 2.2 Supply pump rev/min 0,8-1,3(0,6-1,5)(4,2-5,1)5,5-6,0(5,3-6,2) kp/cm² 500 1000 Overflow delivery rev/min mind. 25 55-125(40-140) cm³/10 s

2.3	Fuel	deliveri	es

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	Charge-air pressure kp/cm²
End stop	Full	1120-1160 (1100-1180) 1100 1000 700 500	0 (15,0-25 47,5-50,5 (46,5-51 (46,0-48 44,5-47,4 (43,5-48	,0)
	Stop	1050	0	
idle stop	Full	280-330 (260-350) 250	0 (15,0-25	,0)
End stop	Start	100 130-230	mind.110,0	

Angle to the stop-plate	Pre-setting dimensions
Pump a = 25 ± 4° B = 48 ± 8° Y = 30 - 8°	Pump Dimension IV = - mm Dimension V = - mm Dimensions for pre-setting
$^{\circ}$ = 60 + 8° Dime	nsion I = 7.0 mm
	nsion II = 9,0 mm nsion III = 30,8 mm

WPP 001/4 STE 6,0f 2

1. Edition

VA 6/100 H 1150 BR 160 0 460 306 107

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

Pre-stroke setting

0,3_{mm}

supersedes

company

Steyr WD 610-50

engine:

All test specifications are valid for Bosch Fuel Injection Pump Test Benches

and Testers
Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

1.	Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1	Timing device travel	800	4,8-5,8	mm		
1.2	Supply pump pressure	800	4,5-5,0	kp/cm ²		
1.3	Full-load delivery without charge-air pressure	900	60,5-62,5	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air			cm ³ /1000 strokes	[
1.4	pressure Idle speed regulation	300	7,0-13,0	cm ³ /1000 strokes		3,0
1.5	Start	100	mind.80,0	cm ³ /1000 strokes		
1.6	Full-load speed regulation	1250	26,0-34,0	cm ³ /1000 strokes		

2.1 Timing device	ecificati rev/min	300-450(270-480)	800	
	mm	Start	(4,5-6,1)	
2.2 Supply pump	rev/min	100	800	1150
a.a cappiy pamp	kp/cm²	1,0-1,5(0,8-1,7)	(4,3-5,2)	5,8-6,3(5,6-6,5)
Overflow delivery	rev/min	500		1000
Oversion delivery	cm ³ /10 s	mind. 25		55-125(40-140)

2.3 Fuel deliverie	

Speed control lever	Delivery tever	rev/min	cm ³ /1000 strokes	Charge-air pressure kp/cm²
End stop .	Full	1280-1340 (1260-1360) 1250 1100 900 500	0 (25,0-35,0 (60,0-63,0 60,5-62,5 (59,5-63,5 59,0-62,0 (58,0-63,0	0) 5)
	Stop	1150	0	
ldle stop	Full	370-420 (350-440) 300	(6 ₅ 0-14,0)	
End stop	Start	100 120-220	mind.80,0	

Testoil-ISO 4113

617

Angle to the stop-plate	Pre-setting dimensions
Pump	Pump
$a = 25 \pm 4^{\circ}$	Dimension IV = $2,5 \text{ mm}$
$^{\beta} = 45 \pm 8^{\circ}$	Dimension V = - mm
$\frac{v}{\delta} = 30 - 8^{\circ}$	
= 60 + 8°	

WPP 001/4 STE 6.0e 1

Edition

VA 6/100 H 1400 BR 160-1 . 0 460 306 112

2. Test Specifications

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

Pre-stroke setting

0.3 mm

supersedes

company:

Steyr WD 610

engine:

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches**

Test Intructions and Test Equipment

VDT-WPP 161/4 B

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	Testoil-
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	_ A
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			rı	e-setting see revers	e side
1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	1000	6,3-7,3	mm		
1.2 Supply pump pressure	1000	5,1-5,6	kp/cm²		
1.3 Full-load delivery without charge-air pressure	1200	66,0-68,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air	-		cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	300	9,5-15,5	cm ³ /1000 strokes] 	3,0
1.5 Start	100	mind.90,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1510	26,0-34,0	cm ⁹ /1000 strokes		

Checking values in brackets

2.1 Timing device	rev/min	340-490 (310-520)		1000	1200-1350
	mm	Start		(6,0-7,6)	8,7-9,4(8,4-9,7)
2.2 Supply pump	rev/min	100		1000	1400
•	kp/cm²	0,9-1,4(0,7	-1,6)	(4,9-5,8)	6,2-6,7(6,0-6,9)
Overflow delivery	rev/min	500			1000
	cm ³ /10 s	mind. 25			55-125(40-140)
2.3 Fuel deliveries	*,,_,,				
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1560-1620 (1540-1640)	0	(25.0.25.2)	
		1510 1350	62,5-64,5	(25,0-35,0) (61,5-65,5) (65,5-68,5) (62,0-68,0)	
		1200 500	63.0-67.0	(65,5-68,5) (62,0-68,0)	
			00,0 07,0	(02,0-00,0)	
		4400			
	Stop	1400	0		
Idle stop	Full	430-510 (410-530)	0		
		300		(8,5-16,5)	
End stop	Start	100 120-220	mind. 90,0		

Angle to the stop-plate	Pre-setting dimensions		
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 50 \pm 8^{\circ}$ $v = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump = 3,0 mm Dimension IV = - mm Dimension V		

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WPP 001/4 FIA 1,9 c

2. Edition

En

VA 4/90 H 1900 BR 157 O 460 394 006

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

2. Test Specifications Checking values in brackets

Pre-stroke setting

0,3 _{mm}

supersedes	7.71 Fiat
company	237
engino	

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1 1 Timing device travel	1300	7,3-8,3	mm		
1.2 Supply pump pressure	1300	4,5-5,0	kp/cm²		
1.3 Full-load delivery without charge-air pressure	1500	33,0-34,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	320	10,0-16,0	cm ³ /1000 strokes		3,0
1.5 Start	100	mind.65,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1950	16,0-24,0	cm ⁹ /1000 strokes		

2.1 Timing device	rev/min	330-500(300-	530)	1300	1720-1870
	mm	Start		(7,0-7,6)	11,7-12,4(11,4-12,7)
2 2 Supply pump	rev/min	100		1300	1850
	kp/cm ⁻	0,5-1,0(0,3-	1,2)	(4,3-5,2)	5,9-6,4(5,7-6,6)
Overflow delivery	rev/min	500			1500
Overnow delivery	cm ³ /10 s	mind.25			55-125(40-140
23 Fuel deliveries		<u> </u>		to the second se	* · • • • • • • • • • • • • • • • • • •
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	, S	Charge-air pressure kp/cm²
End stop	Full	2080-2200 (2060-2220) 1950 1800 1500 500	0 31,5-34,5 28,5-32,0	(15,0-25,0 (30,5-35,5 (32,5-34,5 (27,5-33,0) } }
	Stop	1900	0		
idle stop	Full	420-500 (400-520) 320	0	(9,0-17,0)	
End stop	Start	100 200-300	mind.65,0		·

Testoil-ISO 4113

BOSCH

Angle to the stop-plate	Pre-setting dimensions		
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 45 \pm 8^{\circ}$ $Y = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump = 1,5 mm Dimension IV = - mm Dimension V		

WPP 001/4 STE 6,0 e Edition .

VA 6/100 H 1300 BR 153 0 460 306 098

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

2. Test Specifications 00 casting 70 the 48 ft 7 ckets

Q.Am

Pre-stroke setting

6.70 supersedes Steyr W 610-01 engine:

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers Test Intructions and Test Equipment **VDT-WPP 161/4 B**

Pre-setting see reverse side

1050-1200

800 .

1.	Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ²
1.1	Timing device travel	800	4,8-5,8	mm .	·	
	Supply pump pressure	800	4,5-5,0	kp/cm ²		
	Full-load delivery without	900	61,0-62,0	cm ³ /1000 strokes		2,5
	charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
1 4	pressure Idle speed regulation	350	7,0-13,0	cm ³ /1000 strokes		3,0
	Start	100	mind.85,0	cm ³ /1000 strokes		
	Full-load speed regulation	1400	32,0-38,0	cm ⁹ /1000 strokes		

2.1 Timing device 2.2 Supply pump Overflow delivery	rev/min mm rev/min kp/cm² rev/min cm³/10 s	Start 100 0,7-1,2(0,5- 500 mind. 25	800	7,7-8,4(7,4-8,7) 1300 6,2-6,7(6,0-6,9) 1000 55-125(40-140)
2.3 Fuel deliveries		1	LBus000 etroken	Charge-air pressure kp/cm²
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	Grange an pressure repressure
End stop	Full	1450-1530 (1430-1550) 1490 1400 1300 1200 900 500	0 max. 5,0 (31,0-39, 56,5-59,5 (55,5-60, 60,5-62,5 (59,5-63, (60,5-62, 57,0-61,0 (56,0-62,	,5) ,5) ,5)
	Stop	1399	0	·
idle stop	Full	400-460 (380-480) 350	0 (6,0-14,	0)
End stop	Start	100 130-230	mind. 85,0	

Angle to the stop-plate		Pre-setting dimensions	
β Υ δ	= 22 ± 4° = 55 ± 8° = 30 - 8° = 60 + 8°	Pump Dimension IV = 3,5 mm Dimension V = - mm .	

WPP 001/4 SAV 2,5 d

Edition

VA 3/100 H 1250 BR 152 0 460 303 090

Setting of the pointer at a stroke of 1 mm in

4.69 supersedes Saviem 714-30-01 engine

relation to outlet "A".

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers **Test Intructions and Test Equipment**

VDT-WPP 161/4 B

Pre-stroke setting

0.2 mm

· · · · · · · · · · · · · · · · · · ·			Pre-setting see reverse side		
1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ²
1.1 Timing device travel	900	7,7-8,7	mm		
1.2 Supply pump pressure	900	5,3-5,8	kp/cm²		
1.3 Full-load delivery without charge-air pressure	900	52,5-53,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1 4 Idle speed regulation	300	7,0-13,0	cm ³ /1000 strokes		3,0
1.5 Start	100	mind.65,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1300	34,0-42,0	cm ⁹ /1000 strokes		

	.		
mm	Start	(7,5-8,9)	11,7-12,4(11,4-12,7)
	100	900	1250
rev/min kp/cm²	0,8-1,3(0,6-1,5)	(5,1-6,0)	6,9-7,4(6,7-7,6)
	500		1000
rev/min cm ³ /10 s	mind. 25		55-125(40-140)
	rev/min rev/min	100 tev/min 0,8-1,3(0,6-1,5) 500 mind 25	100 900 rev/min kp/cm ² 0,8-1,3(0,6-1,5) (5,1-6,0) 500 rev/min mind 25

23 Fuel deliveries				
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	Charge-air pressure kp/cm²
End stop	Full	1370-1420 (1350-1440) 1300 1200 900 500	0 (33,0-43,0 56,0-59,0 (55,0-60,0 (52,0-54,0 47,5-50,5 (46,5-51,5	
	Stop	1250	0	
Idle stop	Full: Start	340-410 (320-430) 300 100 110-210	0 (6,0-14,0) mind.65,0	

Testoil-ISO 4113

BOSCH

Angle to the stop-plate	Pre-setting dimensions	
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 45 \pm 8^{\circ}$ $Y = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 3,0 mm (s.a.BMP) Dimension V = - mm	

WPP 001/4 HAN 4,7a 5

supersedes

Edition

VA 6/100 H 1700 BR 151-2 0 460 306 134

Hanomag company D 162 L engine

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

All test specifications are valid for

Pre-stroke setting

Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

0,3 mm

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel 1.2 Supply pump pressure	1100	5,5-6,5	mm kp/cm²		
1.3 Full-load delivery without charge-air pressure	1100 1000	4,7-5,2 52,5-53,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		1
1.4 Idle speed regulation	350	11,0-17,0	cm ³ /1000 strokes		3,0
1.5 Start	100	mind.65,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1800	31,0-39,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	NS Checking value	s in brackets		
2.1 Timing device	rev/min	610-760(580-		1100	1470-1620
	mm	Start		(5,2-6,8)	11,7-12,4(11,4-12,7)
2.2 Supply pump	rev/min	100		1100	1700
ал обрру рамр	kp/cm²	0,9-1,4(0,7-	1,6)	(4,5-5,4)	6,4-6,9(6,2-7,1)
Overflow delivery	rev/min	500			1500
Overnow delivery	cm ³ /10 s	mind. 25			85-125(70-140)
2.3 Fuel deliveries	<u> </u>	<u></u>			
Speed control lever	Delivery lever	rev/min	cm ³ /1000 s	trokes	Charge-air pressure kp/cm²
End stop	Full	1890-1940 (1870-1960) 1800 1680 1000 500	0 49,0-5 48,5-5	(30,0-40, 53,0 (48,0-54, (52,0-54, 52,5 (47,5-53,	(0)
	Stop	1700	0		
Idle stop	Full	530-600 (510-620) 350	0	(10,0-18,	.0)
End s <u>top</u>	Start	100 150-250	mind.	65,0	

Testoil-ISO 4113

H3

HAN 4,7 a 5

Angle to the stop-plate	Pre-setting dimensions
Pump $ \alpha = 25 \pm 4^{\circ} $ $ \beta = 55 \pm 8^{\circ} $ $ \gamma = 30 - 8^{\circ} $ $ = 60 + 8^{\circ} $	Pump Dimension IV = - MM Dimension V = - MM

WPP 001/4 HAN 4,7a 4 1, Edition

VA 6/100 H 1700 BR 151-1 0 460 306 132

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

supersedes Hanomag company D 162 LS

engine:

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

0,3

1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ²
1.1 Timing device travel	1100	5,5-6,5	mm .		
1.2 Supply pump pressure	1500	4,7-5,2	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	1000	50,5-51,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 idle speed regulation	350	11,0-17,0	cm ³ /1000 strokes		3,0
1.5 Start	100	mind.65,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1800	31,0-39,0	cm ⁹ /1000 strokes		

2. Test Spi 2.1 Timing device	ECITICATIO rev/min	ns 610-760(580-	790)	1100	1470-1620
2.1 Tilling device	mm	Start		(5,2-6,8)	0
		100		1500	1700
2.2 Supply pump	rev/min kp/cm²	0,9-1,4(0,7-	1,6)	(4,5-5,4)	6,4-6,9(6,2-7,1)
	Kp/Cm	500			1500
Overflow delivery	rev/min cm ³ /10 s	mind. 25			85-125(70-140)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 stroke	s	Charge-air pressure kp/cm²
End stop	Full	1890-1940 (1870-1960) 1800 1680 1000 500	0 48,5-51,9 45,0-49,0	(30,0-40,0) 5 (47,5-52,5) (50,0-52,0) 0 (44,0-50,0)	
	Stop	1700	0		
Idle stop	Full	530-600 (510-620) 350	0	(10,0-18,0)	
	Start	100	mind.65,)	
End stop		150-250			

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 55 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 5,0 mm Dimension V = - mm

WPP 001/4 HAN 4,7 a 3 1. Edition

En

VA 6/100 H 1700 BR 151 0 460 306 095

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

supersedes

company Hanomag engine LKW D 162 L

All test specifications are valid for

Bosch Fuel Injection Pump Test Benches and Testers
Test Intructions and Test Equipment

VDT-WPP 161/4 B
Pre-setting see reverse side

Pre-stroke setting

0,3 mm

1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ²
1.1 Timing device travel	1100	5,5-6,5	mm		
1.2 Supply pump pressure	1100	4,7-5,2	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	1000	52,5-53,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	350	11,0-17,0	cm ³ /1000 strakes		3,0
1.5 Start	100	mind.65,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1800	31,0-39,0	cm ⁹ /1000 strokes		

2. Test Sp	ecificati	ONS Checking values in brackets 610-760 (580-790)	4400	4470 4600
2.1 Timing device	rev/min	610-760(580-790)	1100	1470-1620
	mm	Start	(5,2-6,8)	11,7-12,4(11,4-12,7)
2.2 Supply pump	rev/min	100	1100	1700
2.2 Supply bump	kp/cm²	0,9-1,4(0,7-1,6)	(4,5-5,4)	6,4-6,9(6,2-7,1)
		500		1500
Overflow delivery	rev/min cm ³ /10 s	mind. 25		85-125(70-140)

2.3 Fuel deliveri	es
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Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	Charge-air pressure kp/cm²
End stop	Full	1890-1940 (1870-1960) 1800 1680 1000 500	0 (30,0-40 49,0-53,0 (48,0-54 (52,0-54 48,5-52,5 (47,5-53	,0)
	Stop			
idle stop	Full	530-600 (510-620) 350	0 (10,0-18	,0)
End stop	Start	100 150-250	mind. 65,0	·

Testoil-ISO 4113

BOSCH

Angle to the stop-plate	Pre-setting dimensions		
Pump a = 25 ± 4° b = 55 ± 8° v = 30 - 8° e = 60 - 8°	Pump Dimension IV= 5,0 mm (s.a.BMP 161/32) Dimension V= - mm		

WPP 001/4 STE 6,0f

2. Edition

VA 6/100 H 1100 BR 150 0 460 306 086 Setting of the pointer at a stroke of 1 mm in

relation to outlet "A".

supersedes company

6.70 Steyr WD 610 t

engine:

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

0,3m

1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	800	5,8-6,8	mm		
1.2 Supply pump pressure	800	4,7-5,2	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	800	52,5-54,5	cm ³ /1000 strokes		
Full-load delivery with charge-air			cm ³ /1000 strokes	į	
pressure 1.4 Idle speed regulation	280	15,0-21,0	cm ³ /1000 strokes		3,0
1.5 Start	100	mind.80,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1190	26,0-34,0	cm ⁹ /1000 strokes		

2. Test Specifications Checking values in brackets 340-460(310-490) 800 900-1060 2.1. Timing device. 164 7591" (5,5-7,1)8,7-9,4(8,4-9,7) mm Start 100 800 1100 2.2 Supply pump rev/min 1,0-1,5(0,8-1,7) (4,5-5,4)5,8-6,3(5,6-6,5) kp/cm² 500 1000 Overflow delivery rev/min mind. 25 55-125(40-140) cm3/10 s

2.3 Fuel deliveries

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1250-1310 (1230-1330) 1190 1050 800 500	57,5-60,5	(25,0-35,0) (53,5-57,5) (52,0-55,0) (56,5-61,5)	
·	Stop	1100	0		
Idle stop	Full	360-420 (340-440) 280	0	(14,0-22,0)	
End stop	Start	100 130-230	mind. 80,0		

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 60 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 5,5 mm Dimension V = - mm

WPP 001/4 HAN 3,1c 5

1. Edition

VA 4/100 H 1150 BR 148 0 460 091

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

supersedes

Hanomag

company: engine:

D 142 K

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-stroke setting

0,1mm

	·	· Pre-setting see reverse side		
rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1000	4,1-5,1	mm		
1000	5,1-5,6	kp/cm²		
800	50,0-51,0	cm ³ /1000 strokes		2,5
-	~-	cm ³ /1000 strokes		
300	9,5-15,5	cm ² /1000 strokes	<u> </u>	3,0
100	mind.65,0	cm ³ /1000 strokes		
1200	33,0-41,0	cm ⁹ /1000 strokes		
	1000 1000 800 - 300 100	1000 4,1-5,1 1000 5,1-5,6 800 50,0-51,0 	rev/min Settings 1000 4,1-5,1 mm 1000 5,1-5,6 kp/cm² 800 50,0-51,0 cm³/1000 strokes - cm³/1000 strokes 300 9,5-15,5 cm²/1000 strokes 100 mind.65,0 cm³/1000 strokes	rev/min Settings Charge-air press.kp/cm² 1000 4,1-5,1 mm 1000 5,1-5,6 kp/cm² 800 50,0-51,0 cm³/1000 strokes - cm³/1000 strokes 300 9,5-15,5 cm²/1000 strokes 100 mind.65,0 cm³/1000 strokes

2. Test Spe	ecificatio	118 Checking value	s in brackets		
<u>-</u>	rev/min	600-750(570-	·780)	1000	1020-1120
	mm	Start		(3,8-5,4)	4,7-5,4(4,4-5,7)
2.2 Supply pump	rev/min	100		1000	1150
To achil hamp	kp/cm²	1,1-1,6(0,9-	1,8)	(4,9-5,8)	5,6-6,1(5,4-6,3)
Overflow delivery	rev/min	500			1000
Overnow delivery	cm ³ /10 s	mind.25			55-125(40-140)
2.3 Fuel deliveries	<u></u>				
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1230-1280 (1210-1300) 1200 1130 800 500	47,5-50,5	(32,0-42,0) (46,5-51,5) (49,5-51,5) (48,0-53,0)	
	Stop	1150	0		
Idle stop	Full	360-420 (340-440) 300	0	(8,5-16,5)	
		. 300		(0,0-10,0)	
	Start	100	mind.65,0		
End stop		110-210			

Angle to the stop-plate	Pre-setting dimensions	
Pump $^{\alpha} = 25 \pm 4^{\circ}$ $^{\beta} = 40 + 8^{\circ}$ $^{\gamma} = 30 - 8^{\circ}$ $= 60 + 8^{\circ}$	Pump Dimension IV= 7,0 mm (s.a.BMP) Dimension V= - mm	

WPP 001/4 HAN 2,3f

1. Edition

VA 3/100 H 1700 CR 73-1 0 460 303 124

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

Pre-stroke setting

0,3 mm

supersedes

company:

Hanomag

engine.

D 132 H1-TMC

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches**

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

				e serring see reverse side	
1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	1300	3,8-4,6	mm		
1.2 Supply pump pressure	1300	5,9-6,4	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	1200	72,0-75,0	cm ³ /1000 strokes		[
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4 Idle speed regulation			cm ³ /1000 strokes		1
1.5 Start	100	mind.70,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1800	22,0-28,0	cm ³ /1000 strokes		

2. Test Sp	ecificat	ONS Checking values in brackets		
2.1 Timing device	rev/min	640-700(610-730)	1300	1510-1660
	mm	Start	(3,5-4,9)	6,7-7,4(6,4-7,7)
2.2 Supply pump	rev/min	200	1300	1700
E.E. Cuppiy pamp	kp/cm²	1,4-1,9(1,2-2,1)	(5,7-6,6)	7,2-7,7(7,0-7,9)
Overflow delivery		500		1700
Overflow delivery	rev/min cm ³ /10 s	55-100(40-110)		55-100(40-110)

23	Fuel	delive	ries
Z .J	Laci	CONTR	;; ic3

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1860-1930 (1840-1950) 1800 1650 1200 500	73,5-75,5	(21,0-29,0) (72,5-76,5) (71,5-75,5) (66,0-72,0)	
	Stop	1700	0		
idle slop	Full				·
End stop	Start	100 150-250	mind.70,0		

Angle to the stop-plate	Pre-setting dimensions
Pump $ \alpha = 25 \pm 4^{\circ} $ $ \beta = 60 \pm 8^{\circ} $ $ \delta = 30 - 8^{\circ} $ $ = 60 + 8^{\circ} $	Pump Dimension IV = - mm Dimension Y = - mm -

WPP 001/4 PEU 2,0g

2. Edition

VA 4/90 H 2250 CR 165 0 460 394 011

supersedes company

12.74 Peugeot

engine.

XD 4/88

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

 $_{mm}$ ± 0,02 (± 0,04)

1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ²
1.1 Timing device travel	2000	5,9-6,3	mm	·	
1.2 Supply pump pressure	2000	6,0-6,5	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	1000	27,5-28,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	300	14,0-20,0	cm ^{\$} /1000 strokes	Í	3,0
1.5 Start	100	mind.50,0	cm ³ /1000 strokes		ļ
1.6 Full-load speed regulation	2350	13,0-19,0	cm ³ /1000 strokes		

2. Test Sp	ecificat	Ons Checking values in brackets		
2.1 Timing device	rev/min	700-900(670-930)	2000	2300-2450
	mm	Start	(5,6-6,6)	7,8-8,5(7,5-8,8)
2.2 Supply pump	rev/min	200	2000	2250
z.z Supply Pullip	kp/cm²	1,0-1,5(0,8-1,7)	(5,8-6,7)	6,6-7,1(6,4-7,3)
0 0 4-1:		· 500		2250
Overflow delivery	rev/min cm ³ /10 s	55-100(40-110)		55-100(40-110)

23 Fuel deliveries

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full 2550-2650 (2530-2670) 2450 2350 2200 1000 600	0 max. 5,0 27,0-30,0 22,5-26,5	(12,0-20,0) (26,0-31,0) (27,0-29,0) (21,5-27,5)		
	Stop	2250	0		
tdle stop	Full	340-400 (320-420) 300	0	(13,0-21,0)	
End stop	Start	100 150-250	mind. 50,	0	

Testoil-ISO 4113

BOSCH

H15.

Angle to the stop-plate	Pre-setting dimensions		
Pump a = 29 ± 4° b = 55 ± 8° v = 12 - 8° b = 60 + 8°	Pump Dimension IV = 2,0 mm Dimension V = 29,1 mm		

WPP 001/4 STE 6,0g 3

1. Edition

VA 6/100 H 1150 CR 167 0 460 306 156

supersedes company:

Steyr WD 610-40

engine:

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches**

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

0,3 _{mm}

 \pm 0,02 (\pm 0,04)

1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delive ry cm ³
1.1 Timing device travel	900	3,1-3,9	mm		
1.2 Supply pump pressure	900	4,9-5,4	kp/cm ²		
1.3 Fuli-load delivery without	1100	59,5-60,5	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		·
pressure 1.4 Idle speed regulation	250	15,0-21,0	cm ² /1000 strokes		3,0
1.5 Start	100	mind.90,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1240	26,0-34,0	cm ⁹ /1000 strokes		

En

2.1 Timing device	rev/min	ONS Checking values in brackets 400-550 (370-580)	900	1030-1170
	mm	Start	(2,8-4,2)	4,2-4,9(3,9-5,2)
2.2 Supply sump	rou/min	200	900	1150
2.2 Supply pump rev/min kp/cm²	1,5-2,0(1,3-2,2)	(4,7-5,6)	5,7-6,2(5,5-6,4)	
- #		500		1150
Overflow delivery rev/min	rev/min cm ³ /10 s	55-100(40-110)		55-100(40-110)

			1
2.3	Fuel	delive	ries

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop .	Full	1300-1420 (1280-1440) 1300 1240 1100 900 500	0 max. 15,0 57,5-59,5 58,0-61,0	(25,0-35,0) (59,1-61,0) (56,5-60,5) (57,0-62,0)	
	Stop	1150	0		
Idle stop	Full Start	320-400 (300-420) 250 100 120-220	0 mind.90,0	(14,0-22,0)	,

Angle to the stop-plate	Pre-setting dimensions	
Pump $a = 30 \pm 4^{\circ}$ $b = 55 \pm 8^{\circ}$ $b = 30 - 8^{\circ}$ $b = 60 + 8^{\circ}$	Pump Dimension IV = 2,6 mm Dimension V = 24,6 mm	

WPP 001/4 MAN 3,3a 1

1. Edition

VA 6/100 H 1500 CR 181-1 0 460 306 198

supersoles

comparMAN

engine D 0216 MXUL

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting secreverse side

 $0.5 \text{ mm} \pm 0.02 (\pm 0.04)$ Pre-stroke setting

2. Test Specifications

1.	Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery
1.1	Timing device travel	800	2,8-3,8	mm		
1.2	Supply pump pressure	800	4,6-5,1	kp/cm ²		
1.3	Full-load delivery without charge-air pressure	900	57, 5-58, 5	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air pressure			cm ³ /1000 strokes		<u> </u>
1.4	Idle speed regulation	300	12,0-18,0	cm ² /1000 strokes		3,0
1.5	Start	100	mind. 80, 0	cm ³ /1000 strokes		
1.6	Full-load speed regulation	1600	26,0-34,0	cm ⁹ /1000 strokes		

Checking values in brackets

2.1 Timing device	rev/min	400-520(370-	550) 800	1200)	1310-1440
	mm	Start	(2,5-4	,1) 5,6-6,6(5,	, 3-6, 9)	6, 9-7, 6(6, 6-7, 9)
2.2 Supply pump	rev/min kp/cm²	200 1,6-2,1(1,4-	800 2,3) (4,4–5			1500 7,2-7,7(7,0-7,9)
Overflow delivery	rev/min cm ³ /10 s	500 55-100(40-1	10)			1500 55-100(40-110)
23 Fuel deliveries				_		
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	s	Charge-a	ir pressure kp/cm²
End stop	Full	1630-1730 (1610-1750) 1600 1500-1540 1480 900 500		(25,0-35,0) (57,5-62,5) (57,0-59,0) (46,5-53,5)		
	Stop	1500	0			
Idle stop	Full	400-460 (380-480) 300	0	(11,0-19,0)		
	Start	100	mind. 80, 0			
End stop		110-210				

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 55 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 4,0 mm Dimension V = 24,6 mm

 $0.5_{mm} \pm 0.02 (\pm 0.04)$

WPP 001/4 MAN 3,3b

3. Edition

VA 6/100 H 1500 CR 181-2

supersedes 12.78

company: MAN

D 0216 MXUL

All test specifications are valid for Bosch Fuel Injection Pump Test Benches

and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

0 460 306 216

Pre-stroke setting

Testoil-ISO 4113

1. Settings rev/min Charge-air press kp/cm² Daference in delivery cm³ **Settings** 1000 4,7-5,7 1.1 Timing device travel 1000 1.2 Supply pump pressure 5,5-6,0 ⊁p/cm² 1.3 Full-load delivery without 1200 59,6-56,0 cm²/1000 strokes 2,5 charge-air pressure Full-load delivery with charge-air cin3/1000 strokes 300 1.4 Idle speed regulation 12,0-18,9 cm²/1000 strokes 3,0 100 mind. 85, 0 cm³/1000 strokes 1.6 Full-load speed regulation 1600 29, 5-35, 5 cm³/1000 strokes

2.1 Timing device	rev/min	500	1000	1300		1500
	mm	1,3-2,3(1,0-	2,6) (4,4-6,0)	6,3-7,3(6,0	7,6)	7,0-7,7(6,7-8,0)
2.2 Supply pump	rev/min	200		1000		1500
	kp/cm²	1,7-2,2(1,5-	2,4)	5,5-6,0(5,3	3-6,2)	7, 1-7, 6(6, 9-7, 8)
Overflow delivery	rev/min	500				1500
	cm ³ /10 s	55-100(40-1	10)			55-100(40-110)
2.3 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-ai	r pressure kp/cm²
End stop	Full	1670-1730 (1650-1750)	0	09 F_26 F)		**************************************

End stop	Full	1670-1730 (1650-1750) 1600 1480 1200 500		(28,5-36,5) (56,0-61,0) (58,5-60,5) (43,5-49,5)	
	Stop	1500	0		
idle stop	Full	400-460 (380-480) 300	0	(11,0-19,0)	
End stop	Start	100 110-210	mind. 80, 0		

Angle to the stop-plate	Pre-setting dimensions		
Pump \alpha = 25 \pm 4^\circ \beta = 55 \pm 8^\circ \beta = 30 - 8^\circ \beta = 60 + 8^\circ	Pump Dimension (v 3,00 mm) Dimension v 24,65 mm		

46

WPP 001/4 CIT 2,1 d

5. Edition

En

VA 4/90 H 2250 CL 186 0 460 394 031 supersedes Citroen company CRD 90 L

engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

 $_{mm} \pm 0.02 (\pm 0.04)$

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Cifference in delivery cm ³
1.1 Timing device travel 1.2 Supply pump pressure 1.3 Full-load delivery without charge-air pressure Full-load delivery with charge-air pressure 1.4 Idle speed regulation 1.5 Start 1.6 Full-load speed regulation	1400 1400 1500 400 100 1550	4,3-4,7 4,5-5,0 39,5-40,5 10,0-14,0 mind.58,0 9,0-15,0	mm kp/cm² cm³/1000 strokes cm³/1000 strokes cm³/1000 strokes cm³/1000 strokes cm³/1000 strokes		2,5 3,0

2. [EST SPI 2.1 Timing device	rev/min mm	1 375-525(3/	5-555) 5-2,1) (4		800 2050-2200 5,8-7,4)7,0-7,7(6,7-8,0)
2.2 Supply pump Overflow delivery	rev/min kp/cm² rev/min cm ³ /10 s	200 1,3-1,8(1 500 55-100(4		1400 (4,3-5,2)	2250 6,7-7,2(6,5-7,4) 2250 55-100(40-110)
23 Fuel deliveries				<u> </u>	
Speed control lever	Delivery lever	rev/min	cm ³ /1000 s	trokes	Charge air pressure kp/cm²
End stop	Fuli	2850 2550 2400 2230 1500 600	< 4,0 21,0-2 31,75-3 33,0-3	(39,0-41,	0) 5) 0)

J13

End stop

Idle stop

Stop

Full

Start

mind.58,0

0

(8,0-16,0)

2250

600-750

(580-770)

400

100

150-250

Angle to the stop-plate	Pre-setting dimensions		
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 48 \pm 8^{\circ}$ γ	Pump Dimension IV = 1,50 mm Dimension V = 29,15 mm		

WPP 001/4 SAV 3,3c

2. Edition

VA 6/100 H 1500 CR 182 0 460 306 203

5.75 supersedes Saviem company 797-05

engine:

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

 $0.5 \text{ mm} \pm 0.02(\pm 0.04)$

1. Settings	rev/min	Settings		Charge-air press kp/cm²	Difference in delivery
1.1 Timing device travel	800	2,8-3,8	mm		
1.2 Supply pump pressure	800	4,6-5,1	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	900	57,5-58,5	cm ³ /1000 strakes		2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4 Idle speed regulation	300	11,0-19,0	cm ³ /1000 strokes	ĺ	3,0
1.5 Start	100	mind.80,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1600	26,0-34,0	cm ⁹ /1000 strokes		

2.1 Timing device	ecificatio rev/min	NS Checking value 400-520(370		120	0 1310-1440
a. I mining devise	mm	Start	•	1) 5,6-6,6(5,3-6,9)6,9-7,6(6,6-7,9
2.2 Supply pump	rev/min	200	800		1500
and Gappiny parmy	kp/cm²	1,6-2,1(1,4	-2,3) (4,4-5	,3)	7,2-7,7(7,0-7,9)
		500			1500
Overflow delivery	rev/min cm ³ /10 s	55-100(40-	110)		55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1630-1730 (1610-1750)	0		
		1600		(25,0-35,0)	
		1510-1540	Start	/ F. T. C.O. E.\	·
		1480		(57,5-62,5) (57,0-59,0)	
		900	1	167 N EN N	

0

0

(10,0-20,0)

1500

400-460

(380 - 480)

300

100

110-210

estoil-ISO 4113

BOSCH

End stop

idle stop

Stop

Start

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mind. 80,0

Angle to the stop-plate	Pre-setting dimensions .		
Pump α = 25 ± 4° β = 55 ± 8° γ = 30 - 8° = 60 + 8°	Pump Dimension IV = 4,0 mm Dimension V = 24,6 mm		

116

WPP 001/4 IHC 5,81

3. Edition

VA 6/10 H 1500 CR 189 CR 189 P

2. Test Specifications

0 460 306 212 Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

Pre-stroke setting

 $0,4 \text{ mm} \pm 0,02(\pm 0,04)$

3.80 supersedes IHC company D 358 engine:

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers Test Intructions and Test Equipment **VDT-WPP 161/4 B**

Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	1000	5,3-6,1	mm		
1.2 Supply pump pressure	1000	5,5-6,0	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	800	65,0-66,0	cm ³ /1000 strokes	ļ.	2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	330	13,0-21,0	cm ³ /1000 strokes	!	3,0
1.5 Start	100	mind.75,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1650	26,0-34,0	cm ³ /1000 strokes		

Checking values in brackets

2. Test Sp 2.1 Timing device	rev/min	Checking value	1000	1200	1500
	mm	Start 1,2-2,2(0,9-	2,5)(5,0-6,4	6,1-7,1(5,8	3-7,4)7,0-7,7(6,7-7,9)
2.2 Supply pump rev/min		200	1000)	1500
	kp/cm²	1,9-2,4(1,7-	2,6) (5,3-6,	,2)	7,4-7,9(7,2-8,1)
Overflow delivery	rev/min	500			1500
•	cm ³ /10 s	55-100(40-11	0)		55-100(4 0-110)
2.3 Fuel deliveries			er our		
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full .	1690-1740 (1670-1760) 1650 1500 800 500	0 65,5-68,5 61,5-65,5	(25,0-35,0) (64,5-69,5) (64,5-66,5) (60,5-66,5)	
	Stop	1500	0		
Idle stop	Full	430-480 (410-500) 330	0	(12,0-22,0)	
End stop	Start	100 260-360	mind. 75,0		

Angle to the stop-plate	Pre-setting dimensions		
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 50 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 3,00 mm Dimension V = 24,65 mm		

WPP 001/4 IHC 5,8q 2 1. Edition

VA 6/10 H 1500 CR 405 CR 405 P 0 460 306 246

relation to outlet "A".

Setting of the pointer at a stroke of 1 mm in

5.79 supersedes IHC company. D 358 engine:

Pre-stroke setting

 $0.4 \, \mathrm{mm}$

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers Test Intructions and Test Equipment **VDT-WPP 161/4 B**

Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	1000	5,3-6,1	mm ,		
1.2 Supply pump pressure	1000	5,5-6,0	kp/cm²		
1.3 Full-load delivery without charge-air pressure	800	65,0-66,0	cm ³ /1000 strokes		3,0
Full load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4 Idle speed regulation	330	14,0-20,0	cm ^{\$} /1000 strokes		3,0
1.5 Start	100	mind.75,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1650	26,0-34,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	NS Checking value		1200	1500
2.1 Timing device	rev/min	Start	1000	1200	1500
	mm	1,2-2,2(0,9-	2,5) (5,0-6	,4) 6,1-7,1(5	,8-7,4)7,0-7,7(6,7-8,0)
2.2 Supply pump	rev/min	200	1000		1500
	kp/cm²	1,9-2,4(1,7-	2,6) (5,3-6	,2)	7,4-7,9(7,2-8,1)
Overflow delivery	rev/min cm ³ /10 s	500 55-100(40-11	0)		1500 55-100(40-110)
2.3 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1690-1740 (1670-1760) 1650 1500 800	0 65,5-68,5	(25,0-35,0) (64,5-69,5) (64,5-66,5)	2
	Stop	1500	0	,	
tdle stop	Full	430-480 (410-500) 330	0	(13,0-21,0)	
		100	mind.75,0		
End stop	Start	260-360			

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = - \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV= 3,00 mm = 24,65 mm

J20

46

WPP 001/4 IHC 5,8a 3

1. Edition

VA 6/100 H 1400 CR 19-1

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

supersedes

IHC

company engine:

D 358

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

 $0,4 \text{ mm} \pm 0,04$

1.	Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1	Timing device travel	1000	5,0-5,8	mm		
1.2	Supply pump pressure	1000	5,8-6,3	kp/cm ²		
1.3	Full-load delivery without	1200	69,5.70,5	cm ³ /1000 strokes		2,5
	charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
1.4	pressure Idle speed regulation	250	22,0-28,0	cm ³ /1000 strokes		3,0
1.5	Start	100	mind.84,0	cm ³ /1000 strokes		
1.6	Full-load speed regulation	1500	31,0-39,0	cm ³ /1000 strokes		

2. Test Sp 2.1 Timing device	ecificatio	NS Checking value: 250-380 (220-4		1000	1400
	mm	Start		-1,6) (4,7-6,1	1) 6,9-7,6(6,6-7,9)
2.2 Supply pump	rev/min kp/cm²	200		1000	1400 5) 7,3-7,8(7,1-8,0)
Overflow delivery	rev/min cm ³ /10 s	500 55-100(40			1400 55-100(40-110)
2.3 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full .	1550-1620 (1530-1640) 1500 1410-1430 1350 1200 500	0 Start 67,5-70,5 59,0-63,0	(30,0-40,0) (66,5-71,5) (69,0-71,0) (58,0-64,0)	
	Stop	1400	0		
Idle stop	Full	360-420 (340-440) 250	0	(21,0-29,0)	
End stop	Start	100 220-300	mind.84,0		

Testoil-ISO 4113

Je BOSC

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 55 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 2,0 mm Dimension V = 24,6 mm

2. Test Specifications __checking values in brackets

WPP 001/4 CIT 2,6a Edition

VA 4/90 H 2000 CR 406

CR 406 P

0 460 394 043

Pre-stroke setting

supersedes

company:

Citroen CR D 93 B

engine.

1400

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers

1800

Test Intructions and Test Equipment VDT-WPP 161/4 B

			PI	Pre-setting see reverse side			
1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³		
1.1 Timing device travel	1400	5,3-5,7	mm				
1.2 Supply pump pressure	1400	4,8-5,3	kp/cm ²				
1.3 Full-load delivery without charge-air pressure	1200	44,0-45,0	cm ³ /1000 strokes				
Full-load delivery with charge-air			cm ³ /1000 strokes				
pressure 1.4 Idle speed regulation	400	7,0-11,0	cm ⁹ /1000 strokes				
1.5 Start	100	mind.58,0	cm ³ /1000 strokes				
1.6 Full-load speed regulation	2200	22,0-28,0	cm ⁹ /1000 strokes				

2.1 Timing device 2.2 Supply pump Overflow delivery	rev/min mm rev/min kp/cm ² rev/min cm ³ /10 s	Start),9- 200 1,3-1,8(1,1- 500 55-100(40-	2,0)	1400	7,1-8,1(6,8-8,4) 200 6,4-6,9(6,2-7,1) 2000 55-100(40-110)
2.3 Fuel deliveries Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	2400 2300 2200 2000 1200 600		(7,0-15,0) (21,0-29,0) (36,5-40,5) (43,5-45,5) (38,3-43,3)	
	Stop	2000	0		
(dle stop	Full	600-670 (580-690) 400 300	15,0-27,0	(6,0-12,0) (14,0-28,0)	
End stop	Start	100 110-220	mind.58,0		·

Angle to the stop-plate	Pre-setting dimensions
Pump a = 25 ± 4° b = 45 ± 8° y = 16 ± 4° =	Pump Dimension IV = mm Dimension V = 24,65 mm

46

WPP 001(4 HAN 4,7 b 2

1. Edition

VA 6/100 H 1100 CR 75-2 0 460 306 145 Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

2. Test Specifications Checking values in brackets

supersedes

company Hanomag engine D 162 H 1-TMC

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

4000 4400

VDT-WPP 161/4 B

Pre-stroke setting $0,3 \text{ mm} \pm 0,02(\pm 0,04)$

Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1 1 Timing device travel	900	1,3-2,1	mm		
1 2 Supply pump pressure	900	4,3-4,8	kp/cm ²		
1.3 Full-load delivery withou charge-air pressure	ıt 1000	49,5-50,5	cm ³ /1000 strokes		2,5
Full-load delivery with cl pressure	harge-air		cm ³ /1000 strokes		
1 4 Idle speed regulation	300	12,0-18,0	cm ³ /1000 strokes		3,0
1 5 Start	100	mind.65,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	on 1180	26,0-34,0	cm ³ /1000 strokes		

000

21 Timing device	rev/min	580-700(550	1-730)	900	1000-1100
	mm	Start		(1,0-2,4)	2,6-2,3(2,3-3,6)
22 Supply pump	rev/min	100		900	1100
	kp/cm²	1,4-1,9(1,2	?-2,1)	(4,1-5,0)	4,8-5,3(4,6-5,5)
Overflow delivery	rev/min	500			1100
	cm ³ /10 s	55-100(40-1	10)		55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1210-1270 (1190-1290)	0		
		1180	51 5-53 5	(25,0-35,0) (50,4-54,5)	
		1000		(49,0-51,0)	
		500	44,5-47,5	(43,5-48,5)	
			_		
	Stop	1100	0		
Idle stop	Full	370-430	0		
		(350-450) 300		(11,0-19,0)	
	Start	100	mind.65,0		•
End stop		150-250			

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 3,5 mm Dimension V = 24,6 mm

WPP 001/4 IHC 5.8 e

3. Edition

VA 6/100 H 1250 CR 76 0 460 306 147

Setting of the pointer at a stroke of 1 mm in

7.73 supersedes

IHC company D 358 engine

relation to outlet "A".

Ali test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers **Test Intructions and Test Equipment**

VDT-WPP 161/4 B Pre-setting see reverse side

1100-1250

Pre-stroke setting

0,3 mm + 0,04

2. Test Specifications 50° 550 U 32 U 553 U 3ckets

1.	Settings	rev/min	Settings	l'	Charge-air press. kp/cm ²	Difference in delivery cm ²
1.1	Timing device travel	900	3,8-4,8	mm		
1.2	Supply pump pressure	900	5,0-5,5	kp/cm²		
1.3	Full-load delivery without charge-air pressure	900	67,0-68,0	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air			cm ³ /1000 strokes		
1.4	pressure Idle speed regulation	250	12,0-18,0	cm ³ /1000 strokes		3,0
1.5	Start 196 bar	100	mind.90,0	cm ³ /1000 strokes		
1.6	Full-load speed regulation	1300	36,0-44,0	cm ¹ /1000 strokes		

900

2.1 Timing device	mm	Start 200		(3,5-5,1) 900	6,1-	6,8(5,8-7,1) 1250	
2.2 Supply pump	rev/min kp/cm²	1,5-2,0(1,3-500	-2,2)	(4,8-5,7)	6,2-	6,7(6,0-6,9) 1250	
Overflow delivery	rev/min cm ³ /10 s	55-100(40-110)		55-100(40-110)			
23 Fuel deliveries							
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		19	Charge-air pressure kp/cm²	
End stop	Full .	1390-1450 (1370-1470) 1300 1200 800 500	64,0-67,0	(35,0-45 (63,0-68 (66,5-68) (63,5-68	3,0) 3,5)		

0

(11,0-19,0)

1250

380-430

(360-450)250

100

220-320

End stop

Idle stop

Stop

Full

Start

mind.90,0

Angle to the stop-plate	Pre-setting dimensions
Pump a = 25 ± 4° b = 55 ± 8° y = 30 - 8° b = 60 + 8°	Pump Dimension IV = 1,0 mm Dimension V = 24,6 mm

WPP 001/4 IHC 5,8e 1

1. Edition

VA 6/100 H 1150 CR 76 - 1 0 460 906 179

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

supersedes D 358 company:

engine:

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

 $0,3 \text{ mm} \pm 0,04$

2. Test Specifications Checking values in brackets

				Pre-setting See reverse side		
1.	Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ²
1.1	Timing device travel	700	3,0-4,0	mm		
1.2	Supply pump pressure	700	4,4-4,9	kp/cm ²		
1.3	Full-load delivery without charge-air pressure	800	69,5-70,5	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air			cm ³ /1000 strokes		
1.4	pressure Idle speed regulation	475	12,0-18,0	cm ³ /1000 strokes		3,0
1.5	Start	100	mind.90,0	cm ³ /1000 strokes		
1.6	Full-load speed regulation	1200	36,0-44,0	cm ³ /1000 strokes		

e. iear ob	CCHICALIO	Checking value			222 4422
2.1 Timing device	rev/min	350-400(320-	430) 700	900	950-1100
	mm	Start	(2,7-4,3)	4,6-5,6(4,3-	5,9)6,1-6,8(5,8-7,1)
		100	700		1150
2.2 Supply pump	rev/min kp/cm ²	1,8-2,3(1,6-	2,5) (4,2-5	6,1) 6	,0-6,5(5,8-6,7)
		500			1150
Overflow delivery	rev/min cm ³ /10 s	55-100(40-	110)	5	5-100(40-110)
2.3 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²
End stop	Full	1270-1320	0		
		(1250-1340) 1200		(35,0-45,0)	
		1150-1170	Start		
		1100	68,5-71,5	(67,5-72,5)	
	ļ	800	66 0 60 0	(69,0-71,0)	
		500	66,0-69,0	(65,0-80,0)	
		1150	0		
	Stop				
•					

Testoil-ISO 4113

End stop

Idle stop

Full

Start

mind. 90,0

(11,0-19,0)

575-725

(555-745)475

100

220-300

Angle to the stop-plate	Pre-setting dimensions		
Pump $^{\alpha} = 25 \pm 4^{\circ}$ $^{\beta} = 50 \pm 8^{\circ}$ $^{\gamma} = 30 \pm 8^{\circ}$ $^{\delta} = 60 \pm 8^{\circ}$	Pump Dimension IV = 1,0 mm Dimension V = 24,6 mm		

WPP 001/4 HAN 2,3 g

1. Edition

VA 3/100 H 1100 CR 73-2 0 460 309 120

Setting of the pointer at a stroke of 1,12 mm in relation to outlet "A".

supersedes Hanomag company D 132 H1

engine.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

 $0.3_{mm} \pm 0.02(\pm 0.04)$

1.	. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery
1.1	Timing device travel	900	1,5-2,3	mm .		
1.2	Supply pump pressure	900	4,3-4,8	kp/cm ²		
1.3	Full-load delivery without charge-air pressure	1000	53,0-54,0	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4	Idle speed regulation	300	12,0-18,0	cm ³ /1000 strokes		3,0
1.5	Start	100	mind.65,0	cm ³ /1000 strokes		
1.6	Full-load speed regulation	1200	26,0-34,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	Ons Checking values in brackets 600-730 (570-760)	000	4000 4400		
2.1 Timing device	rev/min	600-730(570-760)	900	1030-1120		
	mm	Start	(1,2-2,6)	2,5-3,2(2,2-3,5)		
2.2 Supply nump	rev/min	200	900	1100		
2.2 Supply pump	kp/cm²	1,3-1,8(1,1-2,0)	(4,1-5,0)	4,9-5,4(4,7-5,6)		
		500		1100	,	
Overflow delivery	rev/min cm ³ /10 s	55-100(40-110)		55-100(40-110)		_

	cm ³ /10 s 55-100(40-110)		55-100(40-110)		
2.3 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strakes		Charge-air pressure kp/cm ³
End stop	Full	1220-1270 (1200-1290) 1200 1100 1000 500	0 54,0-56,0 49,5-52,5	(25,0-35,0) (53,0-57,0) (52,5-54,5) (48,5-53,5)	
•	Stop	1100	0		
idle stop	Full	370-430 (350-450) 300	0 .	(11,0-19,0)	•
End stop	Start	100 150-250	mind.65,0		

40

WPP 001/4 HAN 3,1 g 2. Edition

supersedes

VA 4/100 H 1400 CR 74 0 460 304 155

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

company Hanomag engine D 142 H-TMC

5.72

Pre-stroke setting

 $0,1 \text{ mm} \pm 0,02(\pm 0,04)$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

				c setting secretored and		
1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³	
1.1 Timing device travel	1200	3,1-3,9	mm .			
1.2 Supply pump pressure	1200	5,4-5,9	kp/cm ²			
1.3 Full-load delivery without charge-air pressure	1000	56,0-57,0	cm ³ /1000 strokes		2,5	
Full-load delivery with charge-air pressure			cm ³ /1000 strokes			
1.4 Idle speed regulation	300	14,0-20,0	cm ⁹ /1000 strokes	İ	3,0	
1.5 Start	100	mind.80,0	cm ³ /1000 strokes			
1.6 Full-load speed regulation	1500	26,0-34,0	cm ³ /1000 strokes			

2.1 Timing device	ecificatio	NS Checking value 620-820(590-8	350) 1	1200	1300-1410
🗸 ==	mm	Start	(2,8-	-3,2) 4,	3-5,0(4,0-5,3)
		200	1	1200	1400
2 2 Supply pump	rev/min	1,3-1,8(1,1-2	2,0) (5,2	-6,1) 6,	0-6,5(5,8-6,7)
	kp/cm	500			1400
Overflow delivery	rev/min cm ³ /10 s	55-100(40-	110)		55-100(40-110)
2.3 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full .	1560-1620 (1540-1640) 1500 1400 1000 500		(25,0-35,0 (56,0-61,0 (55,5-57,5 (51,0-57,0)
	Stop	1400	0		
tdle stop	Full	380-450 (360-470) 300	0	(13,0-21,0	
End stop	Start	100 150-250	mind.80,0		

Angle to the stop-plate	Pre-setting dimensions		
Pump $a = 25 \pm 4^{\circ}$ $b = 50 \pm 8^{\circ}$ $b = 30 - 8^{\circ}$ $b = 60 + 8^{\circ}$	Pump Dimension IV = 4,0 mm Dimension V = 24,6 mm		

WPP 001/4 HAN 3,1 g 1 1. Edition

VA 4/100 H 1700 CR 74-1 0 460 304 158 Setting of the pointer at a stroke of 1 mm in relation to outlet "A"._

supersedes Hanomag company: D 142 H 2-TMC engine:

Pre-stroke setting

2. Test Specifications

 $0,1 \text{ mm } \pm 0,02(\pm 0,04)$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Testo
I-ISO 4
113

				Pre-setting see reverse side			
1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³		
1.1 Timing device travel	1200	4,6-5,4	mm		5		
1.2 Supply pump pressure	1200	5,4-5,9	kp/cm²		·		
1.3 Full-load delivery without charge-air pressure	1000	51,5-52,5	cm ³ /1000 strokes		2,5		
Full-load delivery with charge-air			cm ³ /1000 strokes		i i		
pressure 1.4 Idle speed regulation	300	14,0-20,0	cm ³ /1000 strokes		3,0		
1.5 Start	100	mind.70,0	cm ³ /1000 strokes				
1.6 Full-load speed regulation			cm ³ /1000 strokes				

2. Test Sp	ecificatio				
1	rev/min mm	520-670(490- Start	700) 13 (4,3	200 -5,7) 6,1	1340-1450 1-6,8(5,8-7,1)
2.2 Supply pump	rev/min kp/cm²	200		200 -6,1) 6,9	1700 9-7,4(6,7-7,6)
Overflow delivery	rev/min cm ³ /10 s	500 55-100(40-			1700 5-100(40-110)
2.3 Fuel deliveries	<u> </u>	<u></u>			
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1780-1850 (1760-1870) 1690-1710 1650 1000 500		(47,0-52,0) (51,0-53,0) (46,0-52,0)	
	Stop	1700	0 .		
(die stop	Full	380-450 (360-470) 300	0	(13,0-21,0)	
End stop	Start	100 150-250	mind. 70,0		

Angle to the stop-plate	Pre-setting dimensions
Pump a = 25 ± 4° b = 55 ± 8° c = 30 - 8° e = 60 + 8°	Pump Dimension IV = 2,0 mm Dimension V = 24,6 mm

KA2

WPP 001/4 HAN 3,1 g 2 1. Edition

VA 4/100 H 1100 CR 74 - 2

2. Test Specifications

2.1 Timing device | rev/min

0 460 304 168 Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

Pre-stroke setting

 $0,1 \text{ mm} \pm 0,02(\pm 0,04)$

supersedes

company Hanomag

engine: D 141 H 1 - TMC

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers

950-1100

2,4-3,1(2,1-3,4)

Test Intructions and Test Equipment VDT-WPP 161/4 B

900

(1,1-2,5)

Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	900	1,4-2,2	mm		
1.2 Supply pump pressure	900	4,5-5,0	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	900	56,5-57,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	300	7,0-13,0	cm ⁹ /1000 strokes		3,0
1.E Start	100	mind.70,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1250	6,0-14,0	cm ⁹ /1000 strokes		

Checking values in brackets

650-800(620-830)

Start

		1 2011.0		, , , , , , , , , , , , , , , , , , , ,	-,: -,:(=,: -,:,
2.2 Supply pump	rev/min	200		900	1100
r.e gabbis bamb	kp/cm²	1,4-1,9(1,2-	2,1)	(4,3-5,2)	5,2-5,7(5,0-5,9)
		500			1100
Overflow delivery	rev/min cm ³ /10 s	55-100(40-	110)		55-100(40-110)
2.3 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1260-1330 (1240-1350)	0		
		1250		(5,0-75,0)	
		1080	56,5-59,5	(55,5-60,5) (56,0-58,0)	. 45% (4
		900 500	54.5-57.5	(53,5-58,5)	
	Stop	1100	0	·	
Idle stop	Fuli	330-390 (310-410)	0		
		300		(6,0-14,0)	
	Start	100	mind.70,0		
End stop		150-250			

Angle to the stop-plate	Pre-setting dimensions
Pump $a = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\delta = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 3,5 mm Dimension V = 24,6 mm

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WPP 001/4 HAN 4,7 b 2. Edition

VA 6/100 H 1400 CR 75 0 460 306 138

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

Pre-stroke setting

 $0,3 \text{ mm} \pm 0,02(\pm 0,04)$

2. Test Specifications Checking values in brackets

supersedes 5.72
Hanomag
D 162 H-TMC

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	1200	3,2-4,0	mm		
1.2 Supply pump pressure	1200	5,3-5,8	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	1000	51,5-52,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	300	17,0-23,0	cm ³ /1000 strokes		3,0
1.5 Start	100	mind.65,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1500	31,0-39,0	cm ⁹ /1000 strokes		

2. 1681 3p 2.1 Timing device	rev/min	580-700 (550-		1200	1260-1380
a	mm	Start		2,9-4,3)	4,3-5,0(4,0-5,3)
2.2 Supply pump	rev/min	200	0	1200 5,1-6,0)	1400 5,8-6,3(5,6-6,5)
Overflow delivery	rev/min cm ³ /10 s	50 55-100(40-11	0		1400 55-100(40-110)
2.3 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 stroke	es	Charge-air pressure kp/cm²
End stop	Full	1560-1650 (1540-1670) 1500 1400 1000 500	0 51,5-54,5 44,5-47,5	(30,0-40,0 (50,5-55,5 (51,0-53,0 (43,5-48,5	5) 1)
	Stop	1400	0		
Idle stop	Full	400-480 (380-500) 300	0	(16,0-24,0	1)
	Start	100	mind.65,)	
End stop		150-250			

Testoil-ISO 4113

BOSCH

Angle to the stop-plate	Pre-setting dimensions	
Pump $\alpha = 25 + 4^{\circ}$ $\beta = 55 + 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 3,5 mm Dimension V = 24,6 mm	

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WPP 001/4 HAN 4,7 b 1 1. Edition

VA 6/100 H 1700 CR 75 - 1 0 460 306 144

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

supersedes

company Hances D 162

engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

0,3 _{mm}

 $\pm 0,02(\pm 0,04)$

1.	Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1	Timing device travel	1200	4,3-5,1	mm		
1.2	Supply pump pressure	1200	5,3-5,8	kp/cm ²		
1.3	Full-load delivery without	1200	52,5-53,5	cm ³ /1000 strokes		2,5
	charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
1.4	pressure Idle speed regulation	300	12,0-18,0	cm ³ /1000 strokes	l .	3,0
15	Start	100	mind.65,0	cm ³ /1000 strokes		
1.6	Full-load speed regulation	1800	26,0-34,0	cm ³ /1000 strokes		

2. Test Specifications Checking values in brackets							
2.1 Timing device	rev/min	400-550(370-580)	1200	1550-1700			
	mm	Start	(4,0-5,4)	7,0-7,7(6,7-8,0)			
2.2 Supply pump	rev/min	200	1200	1700			
Z.Z Guppiy pump	kp/cm²	1,4-1,9(1,2-2,1)	(5,1-6,0)	7,0-7,5(6,8-7,7)			
Overflow delivery	rev/min	500		1700			
Overflow delivery	cm ³ /10 s	55-100(40-110)		55-100(40-110)			

23	Fuel	deliveries

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1820-1920 (1800-1940) 1800 1650 1200 500	0 49,0-52,0 44,5-48,5	(25,0-35,0) (48,0-53,0) (52,0-54,0) (43,5-49,5)	
	Stop	1700	0		
Idle stop	Full	400-480 (380-500) 300	0	(11,0-19,0)	
En <u>d stop</u>	Start	100 150-250	mind.65,0		

Testoil-ISO 4113

BOSCH

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 55 \pm 8^{\circ}$ $Y = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 3,5 mm Dimension V = 24,6 mm

WPP 001/4 OPE 2.0a

Edition

VA 4/90 H 2200 CL 163-3 CL 163-3 P'

2. Test Specifications

0 460 394 036

Pre-stroke setting

supersedes

company:

engine:

Ope1 2,0 Vauxhall

 $0.15 + 0.02(\pm 0.04)$

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** Test Intructions and Test Equipment

9.77

VDT-WPP 161/4 B

Pre-setting see reverse side

1.	Settings	rev/min	Settings		Charge-air press. kp/cm²	Difference in delivery cm ³
1.1	Timing device travel	2000	6,4-6,8	mm		
1.2	Supply pump pressure	2000	7,0-7,5	kp/cm ²		·
	Full-load delivery without	2100	31,0-32,0	cm ³ /1000 strokes		2,0
	charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
1 A	pressure Idle speed regulation	350	5,0-11,0	cm ³ /1000 strokes]	3,0
	Start	100	mind.50,0	cm ³ /1000 strokes	ļ	
	Full-load speed regulation	2420	9,0-15,0	cm ³ /1000 strokes		

Checking values in brackets

2.1 Timing device	rev/min	100	0	2000	2100-2250
	mm	Start 1,2-2	,2(0,9-2,5)	(6,1-7,1)	7,3-7,7(7,0-8,0)
2.2 Supply pump	rev/min	20	0	2000	2200
	kp/cm²	1,3-1,8(1,1-	2,0)	(6,8-7,7)	7,6-8,1(7,4-8,3)
Overflow delivery	rev/min	50	0		2200
	cm ³ /10 s	55-100(40-11	0)		55-100(40 - μμ0)
2.3 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	2650-1800 (2630-2820)	0		
·		2550 2420 2100 1250 600	max.6,0 34,5-37,5 27,0-30,0	(8,0-16,0) (30,5-32,5) (33,5-38,5) (26,0-31,0)	
	Stop	1100	0		
idle stop	Full	370-450 (350-470) 350	0	(4,0-12,0)	
	Start	100	mind. 50,0		
End stop					

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 55 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension i 3,6 mm Dimension F 29,45 mm

WPP 001/4 STE 5,0 b

Edition

VA 6/100 H 1150 CR 160-5 . 0 460 306 243

4.80 supersedes Steyr

company. engine

WD 611.85

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers **Test Intructions and Test Equipment**

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

 $0,2 \text{ mm} \pm 0,02(\pm 0,04)$

1. Settings	rev/min	Settings		Charge-air press.	Difference in delivery cm ³
1.1 Timing device travel	1000	6,6-7,4	mm		
1.2 Supply pump pressure	1000	6,2-6,7	kp/cm ²		
1.3 Full-load delivery without	1100	69,0-70,0	cm³/1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	350	9,0-15,0	cm ⁹ /1000 strokes		3,0
1.5 Start	100	mind.90,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1350	16,0-24,0	cm ¹ /1000 strokes		

2. Test Sp	ecificatio	ns Checking	values in brackets 600	1000	1150
2.1 Timing device	rev/min mm	Start 200 2,0-2,5(1	2,5-3,5(2,2-3,8)	(6,3-7,7) 1000 (6,0-6,9)	7,7-8,4(7,4-8,7) 1150 6,7-7,2(6,5-7,4)
2.2 Supply pump	rev/min kp/cm²	500 55-100(40)		1150 55-100(40-110)
Overflow delivery	rev/min cm ³ /10 s				

23	Fuel	deliv	eries
2.3	rue:	GCIIA.	

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²
End stop	Full	1380-1430 (1360-1450) 1350 1150 1000 500	0 66,8-69,2 60,5-64,5	(15,0-25,0) (68,5-70,5) (65,8-70,2) (59,5-65,5)	
	Stop	1150	0		
Idle stop	Full	460-520 (440-540) 350	0	(8,0-16,0)	
End stop	Start	100 260-340	mind. 90,0		

estoil-ISO 41

BOSCH

KZA

Angle to the stop-plate	Pre-setting dimensions
Pump $a = 25 \pm 4^{\circ}$ $b = 50 \pm 8^{\circ}$ $b = 30 - 8^{\circ}$ $b = 60 + 8^{\circ}$	Pump Dimension 3,20 mm Dimension 24,65 mm

WPP 001/4 PEN 0,6a 2. Edition

VA 2/100 H 1200 CL 162 0 460 302 006

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

 $0.3 \quad \pm 0.02(\pm 0.04)$ Pre-stroke setting

7.73 supersedes Volvo company: **X2** engine

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers Test Intructions and Test Equipment **VDT-WPP 161/4 B**

Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	1000	3,5-4,3	mm .		
1.2 Supply pump pressure	1000	4,9-5,4	kp/cm ²		
1.3 Full-load delivery without	1000	27,5-28,5	cm ³ /1000 strokes		2,0
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	250	7,0-13,0	cm ³ /1000 strokes		3,0
1.5 Start	100	mind.85,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1250	9,0-17,0	cm ³ /1000 strokes		

2. lest 5 p	ecificatio	ns Checking value	540)	1000	1100-1250
2.1 Timing device	rev/min mm	Start		(3,2-4,6)	-
2.2 Supply pump	rev/min kp/cm²	1,2-1,7(1,0-	-1,9)	1000 (4,7-5,6)	1200 5,6-6,1(5,4-6,3) 1200
Overflow delivery	rev/min cm ³ /10 s	500 55-100(40-11			55-100(40-110)
2.3 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1270-1320 (1250-1340) 1250 1150 1000 500	0 26,5-28,5 18,0-21,0	(8,0-18,0) (25,5-29,5) (27,0-29,0) (17,0-22,0)	
	Stop	1200	0		
Idle stop	Full	270-320 (250-340) 250	0	(6,0-14,0)	
End stop	Start	100 150-250	mind. 85,0		·

Angle to the stop-plate	Pre-setting dimensions
Purip $a = 20 \pm 4^{\circ}$ $b = 25 \pm 8^{\circ}$ $b = 30 - 8^{\circ}$ $b = 60 + 8^{\circ}$	Pump Dimension № 4,5 mm Dimension № 24,6 mm

WPP 001/4 PEN 0,6 b 2. Edition

VA 2/100 H 1300 CL 162-1 0 460 302 008

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

Pre-stroke setting

 $0,3 \quad mm + 0,02(+0,04)$

3.77 supersedes **PENTA** company MO 7A engine

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

1.	Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1 1	Timing device travel	1000	3,5-4,3	шш		
12	Supply pump pressure	1000	4,9-5,4	kp/cm²		
1.3	Full-load delivery without charge-air pressure	1000	31,5-32,5	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air pressure			cm ³ /1000 strokes		<u> </u>
1 4	Idle speed regulation	250	7,0-13,0	cm ⁹ /1000 strokes		3,0
1 5	Start	100	mind.85,0	cm ³ /1000 strokes		
1.6	Full-load speed regulation	1350	9,0-17,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	NS Checking value	es in brackets			
2.1 Timing device	rev/min	400-510(570-	540) 70	0.	1000	1100-1250
	m m	Start	1,2-2,2(0	,9-2,5)	(3,2-4,5) 4,3-5,0(4,0-5,3)
2 2 Supply pump	rev/min	200			1000	1300
	kp/cm²	1,2-1,7(1,0-	2,9)	(4,	7-5,6) 6,	0-6,5(5,8-6,7)
Overflow delivery	rev/min	500				1300
·	cm ³ /10 s	55-100(40-11	0)			55-100(40-110)
23 Fuel deliveries					· · · · · · · · · · · · · · · · · · ·	
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Cha	arge-air pressure kp/cm²
End stop	Full	1370-1420 (1350-1440) 1350 1310-1330 1280 1000 500	0 Start 28,5-30,5 21,5-24,5	(8,0-18 (27,5-1 (31,0-1 (20,5-1	31,5) 33,0)	
	Stop	1300	0			
Idle stop	Full	270-320 (250-340) 250	0	(6,0-1	4,0)	
End stop	Start	100 150-250	mind.85,0			·

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 30 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension 24,65 mm Dimension 24,65 mm

46

WPP 001/4 OPE 2,1 a 1

1. Edition

VA 4/90 H 2200 CL 163-1 0 460 394 016 supersedes company

Opel

engine.

TL 1755 Vauxhall

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

est Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

 $0,15_{mm} \pm 0,02 (\pm 0,04)$

1. Settings	rev/min	Settings	,	Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	2000	6,4-6,8	mm		
1.2 Supply pump pressure	2000	7,0-7,5	kp/cm ²		
1.3 Full-load delivery without	1250	37,5-38,5	cm ³ /1000 strokes		2,0
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 idle speed regulation	350	5,0-11,0	cm ² /1000 strokes		3,0
1.5 Start	100	mind.50,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	2420	9,0-15,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	ns Checkii	ng values in brackets	0000	0400 0050
2.1 Timing device	rev/min		1000	2000	<i>⊙</i> 2100-2250
	mm	Start	1,2-2,2(0,9-2,5)	(6,1-7,1) 7	',0-7,7(6,7 - 8,0)
2.2 Supply pump	rev/min	200		2000	2200
Z.Z. Supply pump	kp/cm²	1,3-1,8(1,1-2,0)	(6,8-7,7) 7	,6-8,1(7,4-8,3)
Overalless alexander		500			2200
Overflow delivery	rev/min cm ³ /10 s	55-100(40-110)			55-100(40-110)

23	Fuel	deliv	eries

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	2650-2800 (2630-2820) 2550 2420 2230 2200 1250 600	29,5-32,5	(8,0-16,0) (31,0-35,5) (31,25-35,75) (37,0-39,0) (28,5-33,5)	
	Stop	1100	0		
Idle stop	Full	370-450 (350-470) 350	0	(4,0-12,0)	
End stop	Start	100 110-190	mind.50,0		

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 28 \pm 4^{\circ}$ $\beta = 55 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension ₹ 3,6 mm Dimension ₹ 29,45 mm

46

WPP 001/4 OPE 2,1a 6 Edition

n

VA 4/90 H 2200 CL 163 CL 163 P O 460 394 009 supersedes 9.76 company: Ope1

company: engine:

Pre-stroke setting $0,15 \text{ mm} \pm 0,02(\pm 0,04)$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ²
1.1 Timing device travel	2000	6,4-6,8	mm		
1.2 Supply pump pressure	2000	7,0-7,5	kp/cm ²		
1.3 Full-load delivery without	1250	37,5-38,5	cm ³ /1000 strokes		2,0
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	350	5,0-11,0	cm ³ /1000 strokes	ļ	3,0
1.5 Start	100	mind.50,0	cm ³ /1000 strokes	1	
1.6 Full-load speed regulation	2420	9,0-15,0	cm ⁹ /1000 strokes		

2. Test Sp	ecificati	ions Check	ing values in brackets	2000	2100-2250
2.1 Timing device	rev/min			(6,1-7,1)	7,0-7,7(6,7-8,0)
	mm	Start 20	1,2-2,2(0,9-2,5)	2000	2200
2.2 Supply pump	rev/min kp/cm²	1,3-1,8	(1,1-2,0)	(6,8-7,7)	7,6-8,1(7,4-8,3)
Overflow delivery	rev/min cm ³ /10 s	55-100(0 40-110)		2200 55-100(40-110)

23	Fuel	deliveries	

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	Charge-air pressure kp/cm²
End stop	Full	2650-2800 (2630-2820)	0	
•		2550	max.6,0	
		2420	(8,0	-16,0)
		2230	32,0-34,5 (31,	0-35,5)
		2200	32,25-34,75) (31,2	
		1250 600	29,5-32,5 (28,	0-39,0) 5-33,5)
	Stop	2200	0	
Idle stop	Full	370-450 (350-470)	0	
		350	(4.0	-12,0)
		100	mind.50,0	
	Start		111101000	
End stop	1	110-190	Į.	i ·

Angle to the stop plate	Pre-setting dimensions
Pump $\alpha = 28 \pm 4^{\circ}$ $\beta = 55 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension v 29,45 mm

WPP 001/4 OPE 2,1b Edition

1.75 supersedes

Ope1 2,0 1tr.

company engine:

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches**

and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

VA 4/90 H 2200 CL 163-2 CL 163-2 P 0 460 394 026

Pre-stroke setting

 $0,15 \text{ mm} \pm 0,02(\pm 0,04)$

1.	Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1	Timing device travel	2000	6,4-6,8	mm		
1.2	Supply pump pressure	2000	7,0-7,5	kp/cm ²		
1.3	Full-load delivery without charge-air pressure	2100	31,0-32,0	cm ³ /1000 strokes		2,0
	Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
14	Idle speed regulation	350	5,0-11,0	cm ⁹ /1000 strokes		3,0
1.5	Start	100	mind.	cm ³ /1000 strokes		
1.6	Full-load speed regulation	2420	9,0-15,0	cm³/>3200 strokes		

2. Test Sp	2. Test Specifications Checking values in brackets							
2.1 Timing device	rev/min		1000	2000	2100-2250			
	mm	Start	1,2-2,2(0,9-2,5)	(6,1-7,1)	7,3-7,7(7,0-8,0)			
2.2 Supply pump	rev/min	20	0	2000	2200			
	kp/cm²	1,3-1,8	(1,1-2,0)	(6,8-7,7)	7,6-8,1(7,4-8,3)			
Overflow delivery	rev/min	50	0		2200			
	cm ³ /10 s	55-100(40-110)		55-100(40-110)			

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop .	Full	2650-2800 (2630-2820) 2550 2420 2100 1250 600	27,0-30,0	(8,0-16,0) (30,5-32,5) (33,5-38,5) (26,0-31,0)	
	Stop	2200	0		
idle stop End stop	Full Start .	370-450 (350-470) 350 100 110-190	0 mind. 50,0	(4,0-12,0)	

Angle to the stop-plate	Pre-setting dimensions		
Pump $\frac{\alpha}{\beta} = 28 \pm 4^{\circ}$ $\frac{\beta}{\gamma} = 55 \pm 8^{\circ}$ $\frac{\beta}{\delta} = 30 - 8^{\circ}$ $\frac{\beta}{\delta} = 60 + 8^{\circ}$	Pump Dimension_V 3,69 mm Dimension_V 29,45 mm		

L8

WPP 001/4 STE 6,0g 5

Edition

cm³/1000 strokes

VA 6/100 H 1200 CR 178 0 460 306 188

1.6 Full-load speed regulation

supersedes

Steyr WD 610.41

company: engine.

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

 $0,3_{mm} \pm 0,02(\pm 0,04)$

1. Settings	rev/min	Settings		kp/cm ²	cm ³	
1.1 Timing device travel	900	3,0-3,8	mm			
1.2 Supply pump pressure	900	4,9-5,4	kp/cm²			
1.3 Full-load delivery without	1180	69,0-70,0	cm ³ /1000 strokes		2,5	
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes			
pressure 1.4 Idie speed regulation	270	11,0-19,0	cm ³ /1000 strokes		3,0	
	100	mind.90,0	cm ³ /1000 strokes	1		
1.5 Start	1280	31,0-39,0	cm ³ /1000 strokes			

2. Test Specifications Checking values in brackets Start									
2.1 Timing device	rev/min	300-450(270-480)		50 1070-1210					
] mm	0,7-1,7(0,4-2,0)	(2,7-4,1)3,5-4,5(3,	2-4,8) 4,2-4,9(3,9-5,2)					
2.2 Supply pump	rev/min	200	900	1200					
	kp/sm²	1,5-2,0(1,3-2,2)	(4,7-5,6)	6,0-6,5(5,8-6,7)					
Overflow delivery	rev/min	500		1200					
,	cm ³ /10 s	55-100(40-110)	•	55-100(40-110)					

	cm=/10 s	55-100(40-1	107	33-100(40-110)		
2.3 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²	
End stop	Full 1300-1420 (1270-1450) 1280 1210-1240 1180 900 500		0 (30,0-40,0) Start (68,5-70,5) 65,0-68,0 (64,0-69,0) 63,0-66,0 (62,0-67,0)			
idle stop End stop	Full Start	350-430 (330-450) 270 100 120-220	0 mind.90,0	(10,0-20,0)	·	

Angle to the stop-plate	Pre-setting dimensions
Pump $^{\alpha} = 25 \pm 4^{\circ}$ $^{\beta} = 40 \pm 8^{\circ}$ $^{\gamma} = 30 - 8^{\circ}$ $^{\beta} = 60 + 8^{\circ}$	Pump Dimension V 24,6 mm

410

44

WPP 001/4 PEU 2,1e 1

1. Edition

VA 4/90 H 2100 CR 170-1 0 460 394 020 supersedes

company Peugeot

engine:

XDD 4/90 für Saviem SG 1

All test specifications are valid for Bosch Fuel Injection Pump Test Benches

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

0 _{mm}

 $\pm 0,02(\pm 0,04)$

1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	2000	5,8-6,2	mm		
1.2 Supply pump pressure	2000	5,6-6,1	kp/cm ²		
1.3 Full-load delivery without	1400	37,5-38,5	cm ³ /1000 strokes		1,5
charge-air pressure Full-load delivery with charge-air		·	cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	330	10,0-14,0	cm ² /1000 strokes	<u> </u> 	3,0
1.5 Start	100	mind.70,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	2200	17,0-23,0	cm ² /1000 strokes		

2. Test Sp	ecificati	ONS Checking valu	ies in brackets			
2.1 Timing device	rev/min	Start	1000	1600	2000	2200-2400
	mm	0,7-1,7(0,4	-2,0)3,7	-4,5(3,4-4	,8(5,5-6,5)6	,9-7,6(6,6-7,9)
aa Sussky syma	rev/min	200			2000	2100
2.2 Supply pump	kp/cm ²	1,0-1,5(0,8	3-1,7)	•	(5,4-6,3)	
		500				2100
Overflow delivery	rev/min cm ³ /10 s	55-100(40-1	10)			55-100(40-110)

23	Fuel	delive	eries

	1	1	13		1 on
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	2300	max.9,0	.	
		2200		(16,0-24,0)	
		1050	33,75-36,25	(32,75-37,25)	
		1400		(37,0-39,0)	
	ļ	850		(29,25-33,75)	
	1	500	30,25-32,75	(29,25-33,75)	
		2100	0		
					1
	Stop				
Idle stop	Full	400-460	0		
		(380-480)		40 0 47 0	
		330		(9,0-15,0)	
		100	mind.70,0		
End ston	Start	150-250			
End stop		150-250			

Angle to the stop-plate	Pre-setting dimensions
Pump $ \frac{\alpha}{\beta} = 30 \pm 4^{\circ} $ $ \gamma = \pm 8^{\circ} $ $ \delta = 18 + 2^{\circ} $ $ = -6^{\circ} $	Pump Dimension ¥ 2,0 mm Dimension ¥ 25,0 mm

WPP 001/4 CIT 2,1 b

Edition

VA 4/90 H 2250 CR 171-1 0 460 394 018

supersedes Citroen CRD 90 company-

engine:

 $\pm 0,02(\pm 0,04)$

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers **Test Intructions and Test Equipment**

VDT-WPP 161/4 B

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ì	-	-	-	

Pre-stroke setting

4 6 444			Pre-seiting see reverse side		
1. Settings	rev/min	Settings		Charge-air press	Difference in delivery
1.1 Timing device travel	1400	4,8-5,2	mm		•.
1.2 Supply pump pressure	1400	4,5-5,0	kp/cm²		
1.3 Full-load delivery without charge-air pressure	2250	32,5-33,5	cm ³ /1000 strokes		1,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4 Idle speed regulation	300	9,0-15,0	cm ² /1000 strokes	<u> </u>	2,0
1.5 Start	100	mind.58,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	2400	15,0-21,0	cm ³ /1000 strokes		

2. Test Sp	ecificati	ONS Checking values in bracket	ls	
2.1 Timing device	rev/min	Start		
2.2 Supply pump	mm rev/min kp/cm²	0,4-1,6(0,2-1,9)(4 200 1,0-1,5(0,8-1,7)	1400 ,5-5,5)7,1-8 1400 (4,3-5,2)	1800 1950-2100 ,1(6,8-8,4)8,9-9,6(8,6-9,9) 2250 7,1-7,6(6,9-7,8)
Overflow delivery	rev/min cm ³ /10 s	500 55-100(40-110)		2250 55-100(40-110)

2.3	Fuel	deliveries

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	2400 2250 1250 600	0 34,5-36,5 29,0-32,0	(14,0-22,0) (32,0-34,0) (33,5-37,5) (28,0-33,0)	
*	Stop	2250	0		
Idle stop	Full Start	310-380 (290-400) 300 100 150-250	0 mind.58,0	(8,0-16,0)	·

Testoil-ISO 4113

BOSCH

Angle to the stop-plate	Pre-setting dimensions
Pump a = 25 ± 4° b = 55 ± 8° v = 12 ± 4° δ = 50 + 8°	Pump Dimension Tv 1,6 mm Dimension = v 24,6 mm

WPP 001/4 STE 2,4a

Edition

supersedes

7.73

company engine

Steyr WD 308.40

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

0 460 393 007

VA 3/90 H 1200 CR 172

 $0,3 \text{ mm} \pm 0,02(\pm 0,04)$

1.	Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1	Timing device fravel	800	1,5-2,3	mm .		
12	Supply pump pressure	800	4,5-5,0	kp/cm ²		
1.3	Full-load delivery without charge-air pressure	1150	52,0-53,0	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air pressure	~- ==		cm ³ /1000 strokes		
14	Idle speed regulation	300	9,5-15,5	cm ³ /1000 strokes		3,0
1.5	Start	100	mind.70,0	cm ³ /1000 strokes		
1.6	Full-load speed regulation	1300	26,0-34,0	cm ⁹ /1000 strokes		

2.1 Timing device	rev/min	400-550(370-580)	600	800	920-1170
	mm .	Start 0,4	-1,4(0,1-1,9	9)(1,2-2,6)2	,4-3,1(2,1-3,4)
2 2 Supply pump	rev/min	200		800	1200
	kp/cm ²	1,6-2,1(1,4-2;3)	((4,7-5,2) 5,9	9-6,4(5,7-6,6)
Overflow delivery	rey/min	500			1200
•	cm ³ /10 s	55-100(40-110)		5:	5-100(40-110)

	_	
23	Fuel	deliveries

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1360-1420 (1340-1440)	0	<u></u>	
		1300		(25,0-35,0)	
		1240-1270	Start	4	
		1150		(51,5-53,5)	\
		900	55,0-57,0	(54,0-58,0) (58,0-63,0)	
		500	39,0-02,0	(30,0-03,0)	
	Stop	1200	0	y	
Idle stop	Full	400-450	0		
		(380 - 470) 300		(8,5-16,5)	
	Start	100	mind. 70,0	ú	
End stop_		130-230			

Testoil-ISO 4113

BOSCH

Angle to the stop-plate		Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 45 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	ż	Pump = 4,0 mm Dimension V 24,6 mm

WPP 001/4 FIA 2,6d 1. Edition

VA 4/110 H 1600 CL 72 0 460 314 020

0,5

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

supersedès

company:

Fiat

engine:

8040

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

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	1.2	S
	1.3	Fu

Pre-stroke setting

1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ²
1.1 Timing device travel	1200	6,5-7,3	mm		
1.2 Supply pump pressure	1200	6,0-6,5	kp/cm ²		
Full-load delivery without charge-air pressure	1000	59,0-60,0	cm ³ /1000 strokes	i	
Full-load delivery with charge-air			cm ^S /1000 strokes		
pressure 1.4 Idle speed regulation	300	12,0-18,0	cm ² /1000 strokes	 	
1.5 Start	100	mind.130,0	cm ³ /1000 strakes		
1.6 Full-load speed regulation	1700	38,0-46,0	cm ³ /1000 strokes		

2. Test Sp	ecificat	Ons Checking values in brackets		
2.1 Timing device	rev/min	400-500(370-530)	1200	1420-1550
	mm	Start	(6,2-7,6)	8,9-9,6(8,6-9,9)
2.2 Supply pump	rev/min	200	1200	1600
2.1 Supply pump	kp/cm ²	1,8-2,3(1,6-2,5)	(5,8-6,7)	7,3-7,8(7,1-8,0)
	(m)	500		1600
Overflow delivery	rev/min cm ³ /10 s	55-100(40-110)		55-100(40-110)

2.3	Fuel	deliveries	ŝ
-----	------	------------	---

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1780-1850 (1760-1870) 1700 1600 1000 500	0 54,0-56,0 52,0-55,0	(37,0-47,0) (53,0-57,0) (58,5-60,5) (51,0-56,0)	
	Stop	1600	.0		
idle stop -	Full	320-380 (300-400) 300	0	(11,0-19,0)	
End stop	Start	100 200 - 300	mind.130,0	3	

Angle to the stop-plate	Pre-setting dimensions		
Pump $ \alpha = 25 \pm 4^{\circ} $ $ \beta = 50 \pm 8^{\circ} $ $ \delta = 30 - 8^{\circ} $ $ = 60 \pm 8^{\circ} $	Pump Dimension IV= - TETT Dimension V		

WPP 001/4 HAN 2,32e 2. Edition

VA 3/100 H 1400 CR 73 0 460 303 112

2.1 Timing device rev/min

Pre-stroke setting

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

2. Test Specifications Checking values in brackets | 600-750(570-780)

 $0,3 \quad mm + 0.02(+ 0.04)$

supersedes

5.72 Hanomag D 132 H

company:

1200

engine:

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

1280-1420

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pro-cotting con rous

estoil-ISO 4113

			PI	e-setting see rever	se side
1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ²
1.1 Timing device travel	1200	3,2-4,0	mm		
1.2 Supply pump pressure	1200	5,0-5,5	kp/cm²	•	
1.3 Full-load delivery without charge-air pressure	1000	54,0-55,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	300	12,0-18,0	cm ³ /1000 strokes		3,0
1.5 Start	100	mind.75,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1480	31,0-39,0	cm ⁹ /1000 strokes		
				L	

2.2 Supply pump	rev/min	Start 200	.2.∩)	(2,9-4,3) 1200 (4,8-5,7)	4,3-5,0(4,0-5,3) 1400 5,8-6,3(5,6-6,5)
Overflow delivery	rev/min cm ³ /10 s	500 55-100(40-11		(.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1400 ' 55-100(40-110)
2.3 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²
End stop	Full	1510-1570 (1490-1590) 1480 1380 1000 500		(30,0-40,0) (55,5-60,5) (53,5-55,5) (48,5-53,5)	
	Stop	1400	0		
Idle stop	Full	380-450 (380-470) 300	0	(11,0-19,0)	
	Start	100	mind.75,0		

End stop

150-250

Angle to the stop-plate	Pre-setting dimensions		
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 55 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension V 3,5 mm Dimension V 24,6 mm		